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SOME PROBLEMS OF HISTORICAL
LINGUISTICS IN INDO-ARYAN

UNIVERSITY OF BOMBAY
WILSON PHILOLOGICAL LECTURES

1940—41

SOME PROBLEMS OF HISTORICAL LINGUISTICS IN INDO-ARYAN

BY

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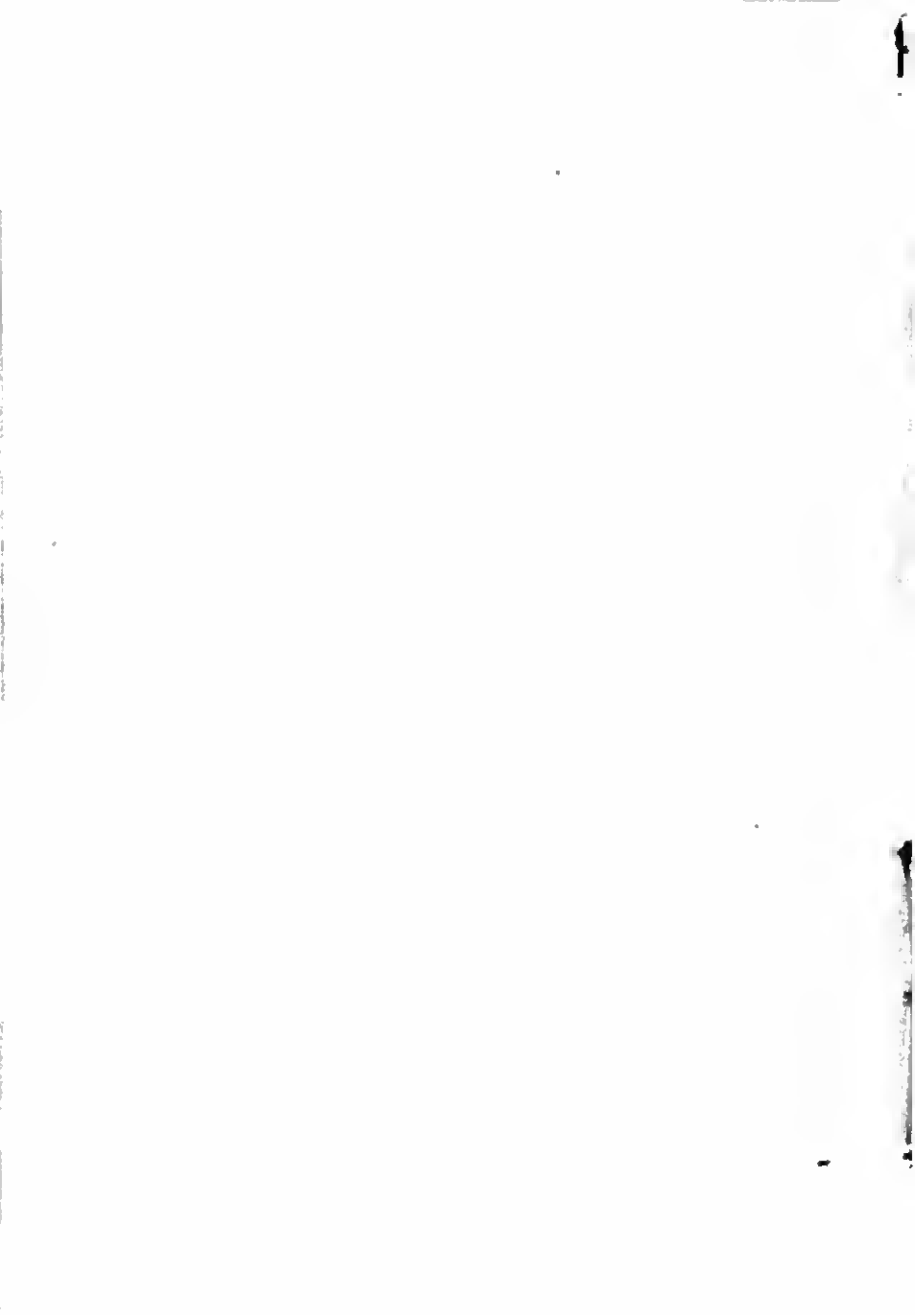
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IN MEMORIAM
VISHNU SITARAM SUKTHANKAR

Book No. 12-5-54

CONTENTS

	PAGE
1. FOREWORD BY SIR RUSTAM P. MASANI ...	ix
2. PREFACE	xiii
3. INTRODUCTION TO HISTORICAL LINGUISTICS ...	1
4. THE VERBAL BASES OF INDO-ARYAN—Part I ...	36
5. THE VERBAL BASES OF INDO-ARYAN—Part II ...	75
6. NOMINAL STEM FORMATION IN INDO-ARYAN ...	102
7. PROBLEMS OF HISTORICAL LINGUISTICS ...	133
8. SYNONYMS, UNSOLVED PROBLEMS AND DESIDERATA	155
9. REFERENCES	180
10. BIBLIOGRAPHICAL INDICATIONS ...	193
11. INDEX VERBORUM	199



FOREWORD

During a life of varied activities and literary pursuits, particularly during the days when I edited certain newspapers, I have, I believe, frequently committed the folly of writing or speaking on subjects of which I had very little knowledge. On no occasion, however, was I asked to write on a subject so difficult for me as linguistics, the subject-matter of the lectures embodied in this book for which my erudite friend Dr. Katre wants a Foreword from me. No argument could dislodge him from the position taken up by him that as I happened to be the Vice-Chancellor of the University of Bombay and Chairman of the Council of Management of the Deccan College Post-Graduate and Research Institute, when he was invited by the Syndicate of the University to give these lectures, it followed as night followed day that I should introduce the book to the reader with a few introductory remarks, even though they should spoil the look of the book !

On the merits of the lectures I shall not presume to offer any opinion; for the capability of the author to do justice to the them, however, I can safely vouch. But no such testimony is called for. Seven years ago, I had the pleasure to greet him as a brilliant scholar and research worker in the field of Indo-Aryan linguistics and as joint editor of the New Indian Antiquary. Soon afterwards, when the newly established Deccan College Research Institute required a scholar of repute to fill the Chair of linguistics, Dr. Katre was selected for the post. Two years later, the Council of Management of the Institute and the Government of Bombay marked their approval of his work by appointing him Director of the Institute. Anything emanating from the pen of so distinguished an autho-

rity on a subject to which he has devoted his time and talent for a number of years can safely be proclaimed to be a valued contribution even by a novice like me, without opening the pages of the book!

By Indo-Aryan is implied in these lectures the Aryan language-family which developed into various forms within India. Dividing the study of the development into three stages, Old Indo-Aryan, Middle Indo-Aryan and New Indo-Aryan, the lecturer indicates the methods employed by him in the course of his own research, the results achieved, and the problems awaiting solution. All the lectures bear the impress of his deep study and reveal at every stage the original work done by him. His detailed analysis of the work of previous scholars shows the shortcomings inherent in the old linguistic approach, and with a wealth of detail he indicates the advance which can be made by the application of the rigorous methods of modern linguistics, keeping constantly the space-time context in proper perspective. In Chapter V Dr. Katre indicates the problems left untouched or created by the previous approaches and the errors unconsciously made by scholars who overlooked the space-time factors of linguistics. In the last lecture he has much to say that is both fresh and interesting, particularly as regards the scope of the new branch of linguistics in which comparative linguistics is treated in its historical and geographical perspective. Dr. Katre calls it the science of Synonymics. It would, he believes, help the student in determining within narrower limits than has been hitherto possible the process of interborrowing that has gone on in each of the Indo-Aryan languages, separating the borrowed element from the true inherited form in its space-time context. The credit of making a beginning in this direction, under Dr. Katre's own guidance, goes to the Deccan College Research Institute and it may be hoped that the new Science will develop, as desired by

Dr. Katre, and receive recognition as an indispensable handmaid to Historical Linguistics.

This and other methods of approach advocated by Dr. Katre call to mind the school of linguistics which sprang up in Europe towards the end of the last century. The followers of that school, who were opposed to many theories of the older generation, were branded with the name of Neo-Grammarians, but the correctness of their new method was in due course practically acknowledged by leading philologists. They held, among other things, that our general views of language and our methods of comparison should be formed after a careful study of living languages, as these alone were freely controllable in every detail and could therefore give us a clear insight into the working of the different motive forces shaping and modifying a language. Although Dr. Katre has necessarily restricted himself in his lectures to Old and Middle Indo-Aryan, it is refreshing to see him dwell in his last lectures on the urgent aspect of living linguistics or the linguistic investigation of correct speech forms. Just as the so-called Neo-Grammarians attached great importance to the study of phonetic variation Dr. Katre stresses the need for exploring the vast field for phonetic study or the study of phonemes characteristic of definite regions, definite classes and castes. Calcutta and Mysore have led the way in this direction. Let us hope Bombay will follow suit. That there is plentiful material to be explored and fresh lines of research to be opened up is clearly established by Dr. Katre.

In order that the immense work that lies ahead may be systematically carried out Dr. Katre pleads for encouragement from our Universities. It is certainly in the power of the Universities to assist in the preparation of the critical edition of texts, as the working basis of all the research work which has

got to be done, and the *indices verborum* and lexicons and other aids to linguistic studies without which no scientific work worth the name could be accomplished in historical linguistics. But while I whole-heartedly support the appeal made to the Universities by Dr. Katre, I should like to point out that the resources of our Universities are limited whereas their obligations and commitments are practically unlimited. No University can give adequate encouragement to research work such as that outlined by Dr. Katre in this book without princely donations from patrons of pure knowledge.

R. P. MASANI

April 10, 1944.

PREFACE

I was appointed the Wilson Philological lecturer for the year 1940-41 by the Syndicate of the University of Bombay in October 1940 and the six lectures here presented were delivered in Bombay on 25th, 26th and 27th February and 3rd, 4th and 5th March 1941. Mahāmahopādhyāya Prof. P. V. Kase presided over the first lecture. The typescript of the lectures was already completed at the time of delivering them and the lectures are reproduced here almost as they were delivered, with a minimum of changes. This explains the reason for printing the references at the end of the book and not within the body of the text or as foot-notes.

The present form of the work is entirely due to the suggestion of the late Prof. Dr. V. S. Sukthankar. I had considered the possibility of revising the lectures completely in presenting them in book form, but he persuaded me to leave them, as far as possible, in their original shape, so that something of the freshness and directness of approach might not be lost in a more academic garb.

There were many aspects which I had to omit for want of space, and I have cut out a number of problems and results since they have appeared elsewhere during these two intervening years. A complete bibliography of Indian Linguistics is being prepared by the Deccan College Research Institute; so I have merely given a select bibliography in this work for the guidance of the more advanced scholars who may wish to carry on further their own studies in this line. Similarly, I have omitted the Appendices giving a systematic tabular account of Indo-Aryan bases in their historical evolution, as they will cover nearly twice the space required by the lectures themselves.

The typescript of these lectures was read by the late Dr. V. S. Sukthankar and by Prof. Dr. Suniti Kumar Chatterji of the University of Calcutta, the *doyen* of present day Indian linguisticians, and it is needless for me to say that the present work has gained considerably by their friendly criticism. But I am alone responsible for the statements made in these lectures. It is a pity that Dr. Sukthankar who saw the development of these lectures in all their stages is no longer with us to-day to see them in print. I have benefited from a close scholarly contact with him for the past ten years, and it is meet that the first fruit of that association should now be dedicated to him. I hope that the lectures are worthy of being offered to his memory. I must also express my indebtedness to Prof. Chatterji for the close study which he has made of my original typescript and for giving me a number of very interesting and valuable observations most of which I have incorporated here.

It will appear at first sight from these lectures that I am laying undue stress on what I have called the space-time context in historical linguistics, and critics might easily construe it as my favourite *cliché*. But recent developments in Indo-European Linguistics by the application of this aspect justify the emphasis I have laid on it. The main object of the lectures has been to draw pointed attention of scholars to the problems which need investigation, and the defects in previous work which should be remedied in our own. If this objective is achieved and if these lectures encourage fresh research, the real aim of the lectures will have been fulfilled.

There now remains to me the pleasant duty of acknowledging the help I have received in the preparation and publication of these lectures. To Sir Rustom Masani who, as Vice-Chancellor of this University and Chairman of the Council of Management of the Deccan College Research

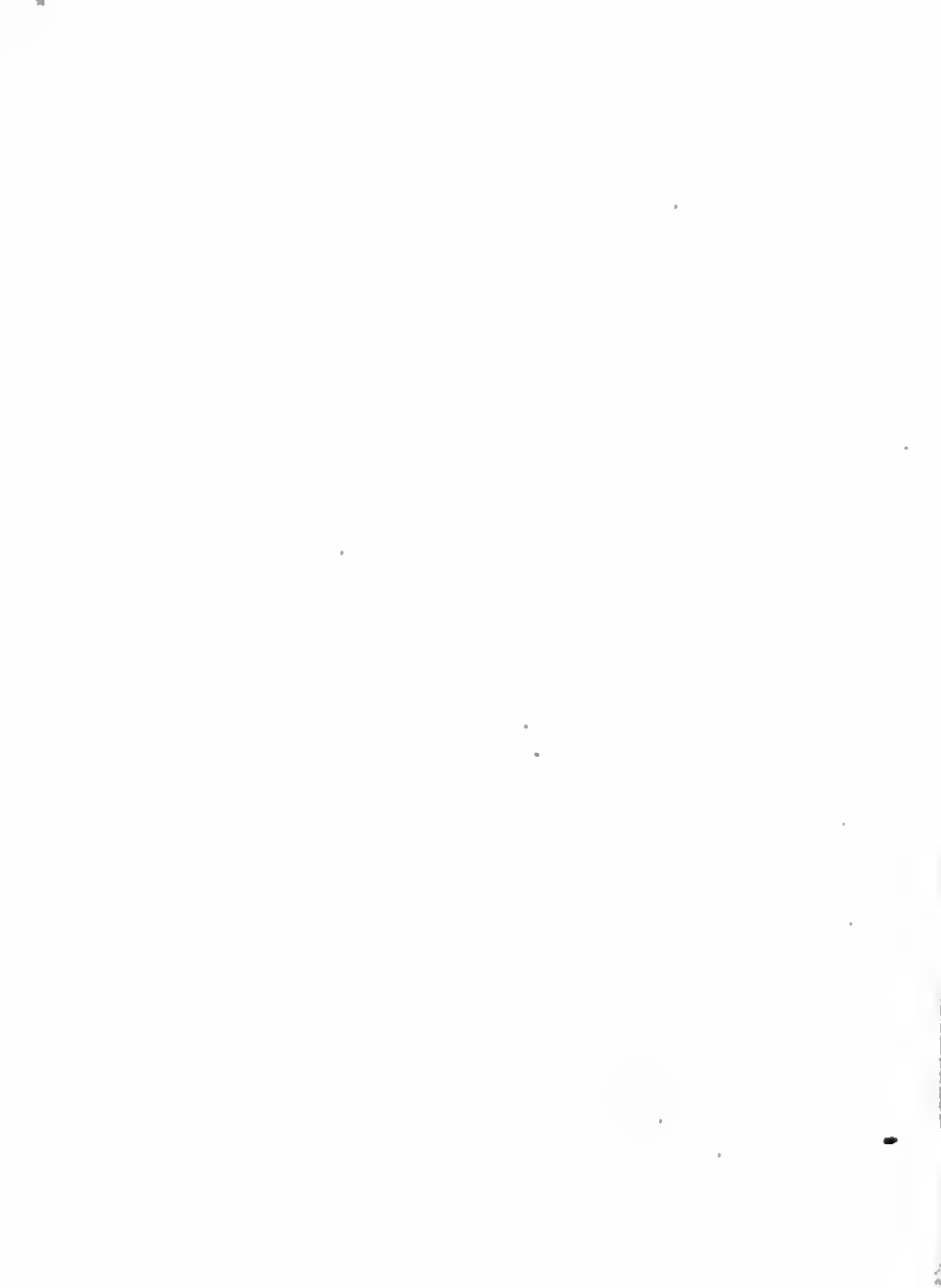
Institute at the time these lectures were delivered, has contributed a Foreword and always shown scholarly interest in advanced research, I must offer my first thanks. Prof. P. K. Gode, the learned Curator of the Bhandarkar Oriental Research Institute and my collaborator in all our joint research projects, has put me under a deep debt of obligation by going through these lectures and the proof-sheets and I have profited to a great extent from his ripe experience. The authorities of Bharatiya Vidya Bhavan of Bombay by publishing an official summary of the lectures in their *Bhāratiya Vidyā* (2. 220-229) and a short Gujarati account in the Hindi-Gujarati journal has put me under a great obligation. I am also indebted to my colleagues in the Deccan College for occasional help. To all these gentlemen I hereby express my grateful thanks.

To the manager and the compositors of the Bombay Vaibhav Press I have to offer my special thanks for the careful manner in which they have done their work and their uniform courtesy in trying to satisfy the demands of accurate but involved printing. The very small number of easily detectable misprints is not a discredit to an Indian Printing Establishment which has not specialised in setting up such complicated typography. To my pupil E. D. Kulkarni, M. A., I am indebted for the *index verborum* at the end. In conclusion and above all I must offer my heartfelt thanks to the University of Bombay for giving me this opportunity of lecturing and publishing the lectures and to the Registrar and the members of his staff for the uniform courtesy which I have received at their hands throughout.

8th October, 1943.

S. M. K.

Vijayādaśamī



LECTURE I
INTRODUCTION
TO
HISTORICAL LINGUISTICS

Yenākṣarasamāmnāyam adhigamya Maheśvarāt
kṛtsnam vyākaraṇam proktam tasmai Pāṇinaye namaḥ
yena dhautā girāḥ purnām vimalaḥ śabdavāribhīḥ
tamaś cājñānājam bhinnam tasmai Pāṇinaye namaḥ

WHEN the Syndicate of the University of Bombay invited me to deliver the Wilson Philological Lectures for the year 1940-41, my thoughts ran back to that august occasion when the great Professor Ramkrishna Gopal BHANDARKAR, even then the doyen of Sanskritists in India, inaugurated this lectureship sixty-four years ago (in 1877) and incidentally gave shape to the comparative study of Indo-Aryan languages in our country. When I reflected upon the achievements of the Professor (and those of the Rev. Dr. WILSON before him), and the galaxy of scholars who have followed him in the various fields cultivated or opened by him, looking upon him as their Guru, I was reluctant to accept this invitation. It was but natural that one who had not the good fortune of studying under this venerable sage of Sangamashram or any of his distinguished epigoni, and whose sphere of activities was somewhat removed from the subjects inspired by the Professor, should hesitate in following his footsteps by accepting this lectureship. Three factors alone have guided me in undertaking the responsibilities of this lectureship in spite of my natural disinclination to accept them, namely an inborn love for the subject which has become a part of myself during the last two decades ; a close contact with an Oriental

Institute dedicated to the services of Sir Ramkrishna in Poona, and lastly the fact of my being the first occupant of a Chair for Linguistics in the Deccan College Research Institute. They form, to my mind, a very intimate connection with the late Professor.

It is somewhat remarkable that nearly sixty years elapsed before the Government took cognisance of Sir Ramkrishna's remarks on that first occasion when he said:

'But encouragement and support are essentially needed; and, taught by our ancient tradition, we naturally look upon these, to the first instance, to our Government. Hitherto it has confined its endeavours to the education of its subjects, a thing which was never before done by any Indian prince, and for which it has the strongest claims on the gratitude of the Indians. But what Indian prince has ever done, viz., the extension of support and patronage to men of learning, and thus enabling them to prosecute their studies, has not yet attracted the attention of our Government, probably because they thought the time had not come for it. Next, it is the duty of those of our countrymen, who enjoy princely fortunes, to encourage the growth and advancement of learning among their countrymen. Now the best and most effectual way, in which learning can thus be encouraged and patronized by all who have the means, is by founding University professorships to be held for life.'

The closing of the Deccan College in 1934 and its revival in 1939 as a Research Institute specialising in Linguistics and History are too recent to need any mention here, but they are stages in a development envisaged by the first Wilson Philological Lecturer. Events have moved slowly since 1877; but with the Government realizing more and more the need for specialized research which was once patronized by the Indian Rulers themselves, we have today in this province two centres of research in Gujarati and Kannada antiquities respectively in Ahmedabad and Dharwar, financed by the Government. The establishment of the Bharatiya Vidya

Bhavan in Bombay in 1938 is also a welcome event anticipated by Sir Ramkrishna.

As the first occupant of a chair in Linguistics in an Institute hallowed by the memory of scholars of the eminence of Professors KIELHORN, BHANDARKAR and PATHAK, I am now placing before you the results of my studies, in all humility and with the deepest reverence to those pioneers, as a small offering to their glorious memory.

*

*

*

THE comparative study of the family of languages which I propose to call here 'Indo-Aryan' and which, according to the terms of the Foundation of this Lectureship, is defined as 'Sanskrit and the Prakrit languages derived from it', in an extended sense, first commenced in this province, and for the matter of that for the first time in India among Indians, with the late Prof. R. G. BHANDARKAR, when he inaugurated this very lectureship sixty-four years ago by delivering a course of seven lectures on the origin and development of all the three phases of this family, from the old and middle to the modern stage. Though the lectures were delivered in 1877 they were not printed immediately; the first two were published in the Journal of the Bombay Branch of the Royal Asiatic Society between 1883 and 1885, and the next two in the same journal between 1887 and 1889. The complete series was published only in 1914. Prof. BHANDARKAR was, however, not the first in the field so far as India was concerned, for already in 1872 and 1875 the first two volumes of BEAMES' *Comparative Grammar of the Modern Aryan Languages of India*: to wit, Hindi, Panjabi, Sindhi, Guzerati, Marathi, Oriya and Bangali, had been published, and the final volume followed in 1879. Similarly HOERNLE'S *Comparative Grammar of the Gaudian Languages* with special reference to Eastern Hindi appeared in 1880, two years before BHANDARKAR'S lectures appeared in

print. TRUMPP'S *Grammar of the Sindhi language*, following his linguistic disquisition in the ZDMG, appeared in 1872.¹ Thus the last quarter of the nineteenth century saw the beginnings of a scientific attempt at the comparative study of the Indo-Aryan family of languages in India at a time when the comparative grammar of the Indo-European languages was entering a new phase of development with the so-called Junggrammatur like BRUGMANN, DELBRUCK, OSTHOFF, and PAUL taking the lead.² This was indeed pioneer work, when we consider the fact that with the single exception of BHANDARKAR the others were foreigners who had to pass through the painful process of assimilating the living languages of the provinces and country to which they devoted their official life. That they could achieve even this much was indeed a triumph to the scientific method cultivated in the West and practised in the different centres of learning. The case of BHANDARKAR was different; having a traditional mastery over Sanskrit and Indian languages, he had to connect these two, not by merely following the dictates of the Prakrit grammarians or by having a Sanskrit bias in explaining vernacular linguistics, but by assiduous study of the Western approaches to linguistics and adopting them to Indian conditions, strictly satisfying the acid tests of the modern scientific methods. Though this enabled him to explain the Indo-Aryan facts better than his other contemporaries working in the same field, the time was not yet ripe for a complete scientific account of all the Indo-Aryan languages. Much of the facts enumerated by these scholars will have to be recast in the light of later researches; even some of their results may be susceptible to criticism in the light of the scientific methods which they themselves professed; but if we remember that 1870 marked the beginning of a new phase in Comparative Grammar in Europe, and that the Indian pioneers could not derive the full benefit of the labours of their European colleagues we can understand the handicaps which beset their first labours.

There were no doubt modern grammars of Sanskrit, Prakrits, Pāli, and some of the Indo-Aryan vernaculars: but WHITNEY'S masterly survey of Sanskrit appeared only in 1879, and the only linguistic grammar of Sanskrit, WACKERNAGEL'S *Altindische Grammatik*—I Lautlehre appeared in 1896 to be followed later by II-i (Einleitung zur Wortlehre, Nominalkomposition) in 1905 and III (Nominalinflexion-Zahlwort-Pronomen) in 1930. PISCHEL'S *Grammatik der Prakrit-Sprachen* appeared in 1900 and was followed by GEIGER'S *Pali literature und Sprache* only in 1916. In the meantime English, French and German scholars were busy studying the different aspects of Indian languages in a scientific spirit. As a result of both missionary and scholarly activities the nineteenth century saw the publication of a large number of lexicons and dictionaries: in this manner we have, for instance, MOLESWORTH'S Marāṭhi-English Dictionary or PLATT'S Hindustani Dictionary. But real scientific lexicography was not applied to any of the individual members of the great Indo-Aryan family of languages until the monumental Petersburg Dictionary of BÖHTLINGK and ROTH made its appearance between 1855 and 1875. On this magnificent work is based WACKERNAGEL'S immortal masterpiece; I may take this occasion to point out how far we can progress in the historical linguistics of any language if there is a scientifically worked out dictionary of that language. But for the untiring zeal of BÖHTLINGK and ROTH much of the progress made in Indo-Aryan linguistics would have been impossible of attainment within so short a period.

I have referred to some of the most important contributions made to Indian linguistics so far as Sanskrit and Prakrits were concerned; but despite the attempts of Dr. BHANDARKAR to introduce this subject in the university curriculum in Bombay much attention was not paid to linguistics in general and Indian linguistics in particular. Even to this day Sanskrit students

are not expected to read the Prakrit passages occurring in Sanskrit plays in the original. As a result of this apathy, if not antipathy, the serious study of Indian linguistics was confined to very few Indians who had the necessary equipment or inspiration to pursue these studies; its appeal naturally went to a few foreign scholars who spent their active official life in India. In this manner we have scholars of the type of Sir George A. GRIERSON, Professor Sten KONOW, Dr. HOERNLE, Dr. TRUMPF and Dr. TESSITORI who next began to contribute actively to Indo-Aryan linguistics. Mention should also be made of C. T. LYALL and KELLOGG who contributed to our knowledge of Hindusthani and Hindi respectively. While the *Linguistic Survey of India* marked a new stage in the development of Indian studies, and inspired a few sporadic attempts by Indians themselves, the first and one of the most important contributions came from the Paris School of Linguistics. Jules BLOCH, trained in the school of Sylvain LE'VI and Antoine MEILLET, having mastered the methods of Indo-European linguistics and studied Sanskrit, undertook to apply these methods to a living Indian language, namely Marāṭhī, and having equipped himself for this study by previous excursions in the Middle Indo-Aryan field, including the epics, came to India and spent some time with Prof. BHANDARKAR. The result of this sojourn was his magnificent *Formation de la langue marathe* which, printed in 1914, could only be released in 1920. It is this brilliant *Formation*, written in the best tradition of BHANDARKAR, LE'VI and MEILLET, that is the starting point of the modern scientific study of Indo-Aryan. Just as the first grammar of any Indian language is due to a European (Father Stephens wrote his Konkani Grammar in the 16th century although it was published first in 1640⁶) so also the first scientific monograph on a modern Indo-Aryan language applying the most modern canons of Linguistics, is due to this representative of the Paris School.

The impetus so given was made full use of by R. L. TURNER, then in Benares and now Director of the School of Oriental Studies, London, and in quick succession came several papers from his pen, dealing in particular with the Phonology of Gujarati and the characteristics of Sindhi.⁴ If BLOCH started the scientific study of modern Indo-Aryan TURNER furthered the movement by his individual contributions, culminating in 1931 in his unique *Nepali Dictionary* wherein he gave to the world for the first time, with great scientific accuracy the comparative etymology of some 6,000 I-A. words found in Nepali. His mastery of the different I-A. languages has also placed him today in the position of editing the most complete comparative etymological dictionary of Indo-Aryan languages, as a sort of supplement to the great *Linguistic Survey of India*.

While the efforts of BHANDARKAR bore fruit, if not in Bombay, at least in Paris, the growing University of Calcutta, under the inspiring personality of its presiding genius, Sir Asutosh MOOKERJEE, the then Vice-Chancellor, took a keen interest in Indian linguistics, and in the person of Suniti Kumar CHATTERJI, now Khaira Professor of Linguistics in that University, found a fitting vehicle for fostering this subject under the genial atmosphere of Calcutta. Prof. CHATTERJI spent two eventful years in Europe and returned to India after coming into contact with some of the greatest linguists, and in 1921 assumed the responsibilities of his office. In 1926 he published his monumental work on the *Origin and Development of Bengali* which made a further progress in Indian linguistics possible by including Phonetics as part and parcel of a linguist's equipment. Much of the progress which has been possible in Indian linguistics since 1921 owes its inspiration to Prof. CHATTERJI.

In close succession comes Prof. Siddheshwar VARMA of the Prince of Wales College, Jammu. Marked out as a keen

phonetician and linguist, it was fitting that he should have undertaken an investigation into the phonetic observations of ancient Indian grammarians, since published in London.⁶ His subsequent publications and contributions to dialect study in the Himalayan regions are too well-known to need discussion here. He has taken note of both Indo-Aryan (Pahari, with Dogri) and Dardic speeches, and has also worked in Burushaski.

The first generation of Indian linguisticians thus consists of BHANDARKAR, BEAMES, HOERNLE, GRIERSON, KONOW and others; the second generation of linguisticians, starting with BLOCH, TURNER, CHATTERJI and VARMA, is still continuing the study of linguistics. A third generation trained under BLOCH and TURNER in Europe and CHATTERJI in India is now making its personal contribution to the development of Indo-Aryan linguistics.

Apart from the fact that the University of Calcutta alone, of all Indian Universities, has a department of linguistics, there has been no definite organisation to bring this subject within the range of other Universities. Credit, therefore, must go to several scholars in the Panjab who organized themselves into a band, and with the unstinted co-operation which Prof. WOOLNER gave them as the Vice-Chancellor of the University of Panjab, founded at the initiative of Dr. VARMA the Linguistic Society of India. Among its founder members are Drs. S. K. CHATTERJI and I. J. S. TARAPOREWALA. After an eventful career of several years, having published six volumes of its *Bulletin* containing many useful contributions to Indian linguistics, the headquarters of the Society moved over to Calcutta. The fate of this Society indicates to us the interest which our learned bodies are taking in pure research. While the contributions of BLOCH and TURNER are to be welcomed, it should be a matter of grave concern to Indian Universities and other learned bodies that fundamental contributions to the history of our own

languages are not forthcoming from the Indian Scholars themselves.

I have very briefly indicated above the general history of purely linguistic research in the Indian field. For a detailed survey of the entire subject I have to refer you to the standard works of WINDISCH and WUEST.⁹

Before turning to the actual subject of the present lecture, which is an introduction to historical linguistics, I must not fail to refer here to several fundamental works which have appeared within the last decade. The place of honour naturally goes to Jules BLOCH's *L'indo-aryen du Vêda aux temps modernes*, published in Paris during 1934. This is the most succinct account of the Indo-Aryan family from the period of its earliest appearance in India in the very rich Vedic literature down to the modern times. In a sense it is the fulfilment of BHANDARKAR's lectures, though its details are less worked out. This is due to the fact that during the intervening period many standard works have appeared dealing with both individual members and groups of Indo-Aryan languages, including his own *La langue marathe*. While this work eschews the wealth of details which characterises BHANDARKAR's lectures, what a vast difference there is between the stage of knowledge displayed in the two works! The entire group of the Himalayan dialects, many of the minor dialects, of Hindi, Singhalese, and in particular Apabhramśa, are additions to the meagre stock of languages treated by BHANDARKAR and his successors. Similarly the Gypsy and the Dardic group, the frontier languages of India sharing the characteristics of Indo-Aryan in opposition to Indo-Iranian, are some of the most intimately studied groups which have been utilized for this panoramic survey of Indo-Aryan. Here again I must refer to the paucity of Indian contribution to the development of Indian linguistics. The progress indicated in BLOCH's second book became possible on account of Sir

George GRIERSON's *Linguistic Survey* which, despite its obvious shortcomings, brought in a large number of little known languages and dialects within the scope of the scientific linguistic investigator.

In that same year appeared another fundamental work from Panjab by Banarsi Das JAIN, entitled *Phonology of Panjabi and Ludhiani Phonetic Reader*. Here the main lines of development of Panjabi sounds and their current phonetic values were determined for the first time with scientific precision. It was a valuable addition to the very meagre Indian contribution to linguistic studies.

As a crowning piece of Indian linguistics we have in 1938 Baburam SAKSENA's *Evolution of Awadhi* (a branch of Hindi), a work whose importance to the future of Indian dialect study can never be overestimated. It is one of the most original, careful and scientific contributions which we could hope for in this field, possible of accomplishment by an extraordinary patience, complete command of the material which no foreigner could have attained, and an intimate acquaintance with modern scientific methods of observation and recording, combined with a delicate perception of even the most casual facts of language.⁷

I shall indicate in a short bibliography at the end of this work the various other major and minor contributions to this growing science since its early commencement in the last quarter of the nineteenth century.⁸ If we bear in mind that the first labours of the pioneers in this field have been carried further by the most eminent scholars who followed them, and the third generation trained in the best tradition of modern linguistics is at work in improving our already widening knowledge of comparative grammar, it will be evident that the time has come to sum up the results of these labours from a

new angle. This is not the place to indicate in detail the shortcomings of the earlier formulations; our duty is to go straight to the subjects and take in our comprehensive stride the main features and lines of development of the Indo-Aryan family from its earliest stage to its middle and modern phases.

By Indo-Aryan, as indicated in the very beginning, we imply the Aryan language-family which developed into various forms within India; we are thus not directly concerned here with Indo-Iranian or even Indo-European unless these earlier stages of the primitive Indian Aryan language throw some light on its purely Indian development. It is customary to divide the study of its development into three stages: (1) Old Indo-Aryan comprising the Vedic Sanskrit dialects and the non-literary speech forms of the Vedic Indians down to the Sūtra period, culminating finally in Pāṇini's Sanskrit;⁹ (2) Middle Indo-Aryan comprising the sacred languages of southern Buddhism,¹⁰ Jainism and other Prakrits of which we have knowledge through literature,¹¹ inscriptions¹² or grants; the spoken speech forms of the Indo-Aryans after Old Indo-Aryan became fixed within the steel frame prepared by generations of scholars culminating in Pāṇini's astounding masterpiece, and in consequence ceased to develop; traces of this are to be found in the Buddhist and Jain Sanskrit works,¹³ and particularly in the epic material; and lastly the final representative of this stage, already seen in its literary aspect, namely Apabhraṃśa;¹⁴ (3) New Indo-Aryan, consisting of all the post-Apabhraṃśa dialects traces of which are seen in early literature and developing into splendid media of the highest type of literature, secular as well as religious, such as Bengali, Hindi, Marāṭhī and Gujarati, and whose dialects have spread today in all parts of Northern India.

Chronologically the development of Old-Indo-Aryan into Middle and New Indo-Aryan has occupied almost four

millenniums, and during this eventful period India has witnessed many vicissitudes, favourable and unfavourable; but the vigour of the Aryan tongue succeeded in over-coming all the major obstacles by making concessions to the minor ones, through accessibility to newer forms and capacity to throw away effete ones, a characteristic which marks out the whole history of Indian culture and gives that vitality to it which enables it to resist all disrupting forces.

As previously indicated, the first generation of linguisticians in the Indian field concentrated on the development of Old Indo-Aryan; this was particularly necessary because it was the 'discovery' of Sanskrit by the Western scholars which turned linguistics into one of the youngest of sciences; the efforts of scholars like GRASSMANN and WHITNEY, with their mathematical intuition, gave us the *Indicis Verborum* to such important texts as the Rg and Atharva Vedas;¹⁵ this impetus continued to function among German and American Scholars and along with the publication of the *Petersburg Lexicon*, there were such linguistic aids, as to make the individual study of Old Indo-Aryan in its Indo-European setting easy of accomplishment; while BRUGMANN was busy with his new comparative grammar of Indo-European on the basis of the new school which was at work, the Indianists followed his model of the Greek Grammar with a comprehensive survey of Sanskrit grammar, a summary of these results finding its place in WACKERNAGEL's *Altindische Grammatik*. It is indeed a matter for rejoicing that so great a scholar of Greek and Sanskrit, possessing an unrivalled insight into the genius of Indo-European linguistics, should have undertaken this work.

It is particularly the Middle Indo-Aryan field that needs attention today. In the words of this Foundation itself, 'Sanskrit and the Prakrit languages derived from it' we see the importance of confining ourselves to these Prakrit languages.

In our terminology this Sanskrit will come in the Old Indo-Aryan category and the derived Prakrits in the Middle Indo-Aryan category. Forty-one years ago the monumental work of PISCHEL appeared on Prakrit Grammar, fourteen years before the Wilson Philological Lectures of Prof. BHANDARKAR appeared together in print. It is descriptive and orthodox. But the intervening period has seen the publication of several important texts, particularly in Apabhraṃśa, which were not available to PISCHEL.¹⁶ Among other things PISCHEL has not made use of Pāli or Aśokan Inscriptions in his great Grammar, for naturally he dealt with Prakrits only as defined by the Prakrit Grammarians, and utilized only such material as came within the scope of these works. Our Middle Indo-Aryan is a vaster field, for it includes in addition to the languages treated by PISCHEL, Pāli, the Prakrits of the Inscriptions which do not come within PISCHEL'S scope as outside the literary norm, the popular Sanskrit found in Buddhist, Jain and epic literature, and lastly the extra-Indian Prakrits evidence for which is found in the *Prakrit Dhammapada* from the Manuscript Dutreil du Rhins and the Kharoṣṭhī Documents found in Niya, and in the early graffite inscriptions found in Ceylon.

Already in the last century the question of the apparently non-Sanskritic forms such as *bhikṣu-sya* occurring in Buddhist Sanskrit works was treated as a case of the 'Gāthā' dialect or a mixture of Sanskrit and Prakrit forms in the popular language of the people. This approach is only a partial solution of the main problem. From the Vedic period downwards, when literature developed within the Aryan strongholds in India, the literary languages derived their character from the strongest political groups, indicating a norm current among the learned of that community, while not completely neglecting the ordinary speech forms current elsewhere. While the spoken dialects continued from generation to generation, evolving slowly newer

formations, the literary languages became the standardised norms.¹⁷ In this manner, the dialects of the people and their literature slowly moved apart, although the gap between them need not necessarily have become big. With literary renaissances coming from period to period, newer norms were established to the exclusion of earlier norms which had by then become obsolete. Thus we have a definite stage of Old Indo-Aryan in the Rg Veda and a younger stage in the Yajus. These factors enable one to speak of the different stages of Sanskrit. But while Sanskrit, in the Pāṇinian sense, became the final norm (in morphology) to be fixed for all time, the spoken languages of the Aryans continued without a break to evolve naturally under the stress of many culture contacts; there was no force here other than the natural evolutionary one pertinent to the context which changed the character of the dialects. It is a well established principle in Linguistics that dialects which have not assumed a literary status preserve their forms in general for a longer period and in a much purer form than the literary languages derived from them. In other words a conscious and deliberate attempt either to restore or revive old moribund or lost forms or to coin new ones, which we see working at the literary medium is lacking in the dialects. The literary medium is, as it were, stylized and divorced to some degree from the spoken languages. Evidences of dialectic tendencies have already been brought out in the language of the Rg Veda; the divorce between the literary and non-literary languages may to some extent be seen in the archaisms of Pāli. These archaisms such as the absolutive in *-tvāna* or the nominative plural of masculine nouns ending in *-a* in *-āso*, indicate to us the conservative nature of dialects as opposed to the innovations—and particularly conscious ones at that—of the literary languages.

These so-called dialects, under circumstances determined

by external conditions such as political supremacy or religious importance, in their turn assumed literary status, and thus gradually got divorced from the spoken languages in their general evolution by becoming stylized. Literary History in India has moved along these lines. Most, if not all, the remnants of speech forms preserved for us are not direct linguistic records on scientific lines of the languages as actually spoken, but are faithful pictures of the literary norms stylized and archaic in opposition to them. Incidents are not lacking to show that literary compositions have come into existence in any of these Old or Middle Indo-Aryan languages at a time when they had actually ceased to exist as naturally growing spoken media. And above all the truth of these statements can be actually verified from our own experience of literary Marāṭhī or Gujarati in opposition to the uncultivated dialects of these languages, and in the colloquial speech of the educated classes also.

While literary activities of individual scholars gave a definite stylistic form to the media employed by them and thus preserved an immutably fixed norm satisfying all the conditions of grammar and vocabulary, the sporadic compositions of the common people who had not the training of the *litterati* more fortunate than themselves but had the gift of composition in common with them, were in the spoken media. Again the classical compositions such as the religious works of the Buddhists or Jains or the Hindus (in the shape of the two major epics and the various Purāṇas) became so popular that even the most illiterate learned large portions of them by heart, and this oral tradition has affected the very text itself, as any textual critic will soon find out. But what has not been properly realized so far is the fact that the linguistic habits and ideals of these reciters or the ignorant copyists who reduced them to writing may influence the text. In consideration of these facts,

it is necessary to include the Sanskrit of the Buddhist and Jain writers where it shows definite lines of demarcation from the accepted norm of Pāṇini; similarly the epic literature comes within the Middle Indo-Aryan domain.

Linguistics or the comparative study of a given family of languages proceeds along two complementary lines; a language has a history or growth commensurate with that of the community which speaks it; when it is reduced to writing it is somewhat divorced from the community and is capable of being analysed, studied and compared with another, independently of the human background; in other words we have to depend solely on the written evidence. In the case of living languages we can study their facts on the spot against the human background and scientific observation or recording is possible. These facts can be reduced to definite written symbols faithfully reproducing the exact spoken sounds. Documentary evidence of a language spoken or current before us is thus limited in its value, bound by the symbols employed in writing it down and whose exact value is very often beyond our powers of recovery. Fortunately for India, however, as the birth place of the science of phonetics, we have correct observations by trained phoneticians about the different sounds in Old Indo-Aryan. This enables us to know the correct value of all the phonetic symbols employed. But pronunciation changes with time and place;¹⁸ we have thus to depend largely upon these ancient descriptions and our modern observations on current speech. These have to be interlinked in the case of Middle Indo-Aryan and the early history of New Indo-Aryan.

Added to these difficulties of Middle Indo-Aryan as defined by us, we find that the documentary evidence is often not very reliable. The conditions of weather are favourable to the early destruction of manuscripts, with the result that those of the works which have come down to us are intermediate copies of

the autographs. Unless all the texts of Middle Indo-Aryan preserved in manuscript form are critically edited, their individual value suffers as witnesses to linguistic facts.

There are two attitudes possible in the weighing in of the evidence from these manuscript sources. Restricting ourselves to the classical Prakrits, we notice that PISCHEL considers the authority of Grammarians like Hemacandra higher than the documentary evidence of even the best manuscripts of Prakrit works. From this point of view even the best readings of the manuscripts will have to be rejected in favour of some inferior one if the latter satisfies some arbitrary rule of the grammarians. If we consider the well-known fact that even such a great polymath as Hemacandra has not had all the material before him to arrive at the proper deductions and we find such equations as Pk. *khambha-* < Sk. *stambha-* in opposition to Vedic *skambha-*,¹⁹ this is a hazardous process to adopt. Nevertheless PISCHEL and his immediate disciples have accepted the authority of the grammarians to the exclusion of the best texts without attempting to go deeper into the problem. Even PISCHEL's own edition of Hemacandra's *Deśināmamālā* shows that he has had to swerve from the view adopted by him because there was no grammatical authority in the case of the *Deśi* words. The second attitude is the more scientific one; for Middle Indo-Aryan takes into account not only the Prakrits described by the Grammarians but also the speech forms current between the period of Aśoka and the invasion of India by the Turks, traces of which we find in all the literary remains. In the case of purely Middle Indo-Aryan compositions preserved in manuscript form, the various manuscripts would diverge from their earliest *archetypus* or even the autograph in the measure of their descent, and if the variants are statistically analysed we may discover that in addition to restoring the critical text we may find traces of actually current Middle Indo-

Aryan tendencies in that particular region where the manuscript was transcribed. Textual critics know that each scribe reserves for himself absolute independence in the committing of scribal errors, and what we term the idiosyncrasy of any scribe is in reality this independence. But this faculty is not so wayward as it would seem in consequence, for the psychology governing these errors can be objectively studied and analysed in the case of each scribe. A statistical analysis of these errors will, in most cases, indicate to us the various causes regarding their genesis. Many have been standardized, as will be seen in any good work on textual criticism; but the most important from our point of view are the conscious emendations made or the corrections adopted, for these variants will reflect the linguistic habits and ideals of the scribe himself. It is this factor which PISCHEL has not taken into account; but in addition, if the best manuscripts favour a reading which cannot be justified by the authority of existing grammarians, its justification lies elsewhere; for Middle Indo-Aryan is not limited to the all too brief account of the grammarians who had to work very much as we have at a period when these languages had already become stylized and divorced from the current literary or spoken norms. There is also an appeal to the New Indo-Aryan languages where the particular formation may have given some inherited characteristics.

In the case of the inscriptional Prakrits, there is not this difficulty to be contended with; once the key to the characters is discovered we shall be reading the contemporary documents or the actual autograph or a direct copy made under the authority of writer or composer himself. The interpretation of the symbols in this event shares the same disadvantages as those in manuscripts, and in addition, where the wear and tear has defaced the writing there will be no scientific means of restoring the text other than conjectural emendation.

There are again the Turfan finds which give us the single

manuscripts of several important works in fragments, but whose date is approximately determinable.²⁰ Here also the conditions are similar to those of inscriptions.

Turning our attention to epic type of literature, we notice that the manuscripts of individual sections hail from different parts of the country, and show a mass of variants, both large and small, with interpolations, accretions, etc. exhibiting in the language of their text a large number of archaisms, solecisms or new forms not sanctioned by classical Sanskrit, but showing distinct signs of a Middle Indo-Aryan construction affecting their growth. A similar factor holds good for the Sanskrit texts of Northern Buddhism and the 'Gāthā' dialect is nothing but the Middle Indo-Aryan affecting the literary style of the more classical type.²¹ It is not so much a mixture of incorrect Sanskrit with correct Sanskrit, but rather a reflection of the condition of the period when the learned spoke correct Sanskrit in their conversation while the common people, not quite divorced from the correct norm, had a Middle Indo-Aryan basis for their conversation.²² The proselytizing activities characteristic of religious literature tended to preserve the conversational style in opposition to the stylized norm of the learned. This factor is of the greatest importance for our Middle Indo-Aryan studies. For while Middle Indo-Aryan literature gives us an idea of Middle Indo-Aryan after it became a literary medium and, therefore, stylized and dead, ceasing to develop further in a normal manner consistent with the human background, the study of these variants in the epics and other forms of popular literature mentioned above, on statistical analysis, will give us an idea of the actual forces at work in Middle Indo-Aryan. For the Middle Indo-Aryan forms in the Sanskrit of the epics could have entered into the epic text only at a time when it was in its formative stage, while the minor variants seen only in small groups of manuscripts represent the linguistic tendencies

current in the particular locality represented by the scribes in so far as the linguistic aspect emerges from the statistical analysis. It is in this sense that these three representative types of Sanskrit, of the Hindus, Buddhists and Jains, preserved in their popular religious literature, form part of that wider but very important aspect of Middle Indo-Aryan.

In some of these branches work has been done during the last two decades; of particular importance is EDGERTON'S contribution to what he calls Buddhist Hybrid Sanskrit;²⁹ his lexicon and grammar of this branch will prove, on completion, the beginning of a better and more authoritative work on Middle Indo-Aryan in general. Similarly the work on the variants of the critical edition of the *Mahābhārata* by the Bhandarkar Oriental Research Institute which is being carried out simultaneously in India³⁰ and Spain³¹ will add much to our knowledge of Middle Indo-Aryan grammar. On this special aspect of the critical edition and its general contribution to Indian linguistics in particular I may refer to my own papers published elsewhere.³²

In discussing the Prakrits, I have referred to the Prakrits of the grammarians and the Prakrits found in literature. If we except the great religious Prakrits (including Pāli and Ardhamāgadhī) we shall find evidence of these languages in the Sanskrit plays, in anthologies like Hāla's *Sattasaī* or Jayavallabha's *Vajjālagga*, in literary compositions such as the lost *Brhat-kathā* of Guṇādhya or in *Setubandha* of Pravarasena, and in the rhetorical treatises where Prakrit quotations bristle along-side Sanskrit. Then again there are the works of the Prakrit grammarians with commentaries and subcommentaries, wherein a large body of Prakrit vocables and forms are quoted. A study of Middle Indo-Aryan will, therefore, have to take into account these two types of Prakrits in addition to the others considered above: for it is only when we take these different types in our

panoramic survey that the true character of Middle Indo-Aryan becomes evident. Middle Indo-Aryan development will thus be considered in all its different aspects, and in its relation both to Old and New Indo-Aryan.

The very large number of modern Indo-Aryan languages added to the already well defined and recognized types by the indefatigable labours of Sir George Abraham GRIERSON, form the basis of his *Survey*; more information and in greater detail has come from the studies of such stalwarts as the Rev. Grahame BAILEY²² D. R. LORIMER²³ and a host of other European and Indian scholars. In the beginning of this lecture I have signalled out the most outstanding contributions to the individual languages forming part of this stage of the development of Indo-Aryan.

This is the vast field which should form the basis of a comparative study of the Indo-Aryan languages. Each stage of development exhibits a vast literature covering every aspect of civilization and culture. Each stage is placed before us, not in a medium which is the common mode of expression of the period concerned, but in a highly stylized, polished and artificial language—artificial in the sense that although the authors were strictly at home in the medium, the medium itself was defunct as a living and growing entity against the very human background where such compositions came into existence.

It is a well-known fact that conditions in India are not favourable to the historian of literature: in the words of WHITNEY: 'Respecting the chronology of this development, or the date of any class of writings, still more of any individual work, the less that is said, the better. All dates given in Indian literary history are pins set up to be bowled down again.'²⁴ It is for this reason that one speaks of the Vedic period as the period of the *Samhitās*, of the *Brāhmaṇas*, *Upaniṣads*, *Sūtras*; and the classical as that of Pāṇini, and that of the poets and dramatists.

Owing to this difficulty, there are no definite means of ascertaining in the majority of cases exact chronology, and recourse should be taken in relative rather than in exact chronology, as a means of fixing the literary strata. What is so characteristic of the literary history is even truer of linguistic history. For in India the literary languages are not national languages until the modern period; there is a divorce between them and the people, except for the common thread of Sanskrit which runs through them and strings them together and if we depend entirely on the documentary evidence as we have to for Old and Middle Indo-Aryan and the early stages of New Indo-Aryan, the gap between the literary languages and the ordinary vernaculars is difficult to bridge. In the Forlong Lectures for 1929 Jules BLOCH remarks:²⁰ 'In India conditions are vastly different; our knowledge of its languages, at least in their most ancient stages, is based only, or nearly so, on literary languages, of which we know neither the local basis, nor the degree of connection with the vernaculars. They do not give expression to the thoughts and feelings of the people; at the most, they give an ideal picture of the culture of a small community. They may differ in character, some highly religious and aristocratic; some more popular, but religious too; the majority are mainly adapted for purely literary usages. The linguist has to be careful in giving their evidence its proper value, before trying to construct the details of the history of Indo-Aryan.'

Thanks to this same scholar we have a very brilliant account of the history of the Indo-Aryan family from its early innovations marking it off from the common parent Indo-Iranian to its breaking up into a number of Middle Indo-Aryan languages which, in their turn, coming into vigorous contact with the Iranian and Turkish types brought in by the invading troops, further branched off into the New Indo-Aryan stage, in his

L'indo-aryen. The age of the Vedas is still a matter of controversy, but in view of many of the important Vedic names appearing in Hittite texts between the 15th and 13th centuries B.C. it would not be far out of our way to compute 1500 B.C. for the time when the Vedas were composed in their most ancient aspects. Thus Indo-Aryan presents to us over 3500 years of continuous history, preserved with the utmost care which the genius of the people could devise in this respect; nowhere else can we find such continuity preserved in spite of the vicissitudes through which Indo-Aryan had to pass during these millenniums. The earliest Middle Indo-Aryan source is seen in the Inscriptions of Aśoka, antedating the oldest manuscripts of any Old or Middle Indo-Aryan work by several centuries, and belongs to the third century before Christ. The beginnings of the New Indo-Aryan stage is somewhere after the 10th century A.D. But the main difficulty which I pointed out is again reiterated by BLOCH when he points out that the Prakrits of literature, including Apabhraṃśa, though originally connected with some local areas, are not images of the living languages or vernaculars but merely 'the symbols of successive stages of Indo-Aryan considered in its ensemble. The details preserved in one or the other of these serve less to specify the dialect than to recognise intermediate stages or to make guesses at evolutions which were arrested.'¹

What are these successive stages of development of Indo-Aryan? We may summarise them here for the sake of the discussion which is to follow in the subsequent lectures. Details of them will be found in such standard works as WACKER-NAGEL'S *Altindische Grammatik* or BLOCH'S *L'indo-aryen* which should be on the right hand side of every scholar interested in these studies.

Within the Old Indo-Aryan itself we have three main branches: the different strata of Vedic Sanskrit, the vernaculars

of the Vedic Indian and Classical Sanskrit. Of the Vernaculars of the Vedic Indian we may only see traces in the so-called Prakritisations found in the Vedic language, such as *sūre duhitā*, *i* for *ṛ* in *śithirā-*, *śithild-*; *śrath-* < **śṛth-*, *ch* for *ps* in *kṛcchrā-* < *kṛpsrā-* from *kṛpate*, *iy* for *dy* in the word *joytis* < *dyotate*; scholars have even tried to see these dialects in the preferential treatment from among the large number of possible forms for each given category; future research must necessarily enlarge the scope of this study. Now as regards classical Sanskrit in opposition to Vedic, the first fact to be noticed is the normalizing and simplification of morphology; of the different terminations of the various cases several have dropped out; the number of verbal forms undergoes very great reduction, the perfect and aorist types being limited to the indicative mood only; verbs which admit of stem shiftings, like the nasal presents, root aorists, have a tendency to disappear; similarly the large number of terminations for the infinitive and absolute forms undergoes reduction; everywhere the normalizing process tends to reduce the richness of the Vedic forms. The middle voice extends to whole verbs when the present stem admitted it in Vedic; the universal use of the dual number, and so on." Then as to vocabulary classical Sanskrit has extended it enormously, sometimes inheriting the vocables directly from Indo-European, and at others differentiating two possible forms of the same vocable in two distinct senses, or extending the sense of two synonymous words in comparison with each other to senses not implied by the one or the other as instanced by such freaks as *vastra* 'sky': *ambara*, or *yuddha* 'pair' after *dvandva*. Then there is again the power of deriving numerous nouns from older ones: added to this ancient inherited stock is a huge mass of accretions of unknown origin. Above all, there is the development of the nominal sentence in opposition to the rich verbal style of the Brāhmaṇas, giving rise later to the unlimited power of making compounds. When such a state of affairs is seen the

language ceases to be a medium of common expression, and is, as BLOCH points out, of general interest as a pathological type, exaggerating greatly the preferential tendencies of a given style. While there is no possibility of limiting these tendencies to certain localities and defined periods of time, despite the rich dialectical material mentioned by the Vārttikakāra and Patañjali, we may consider them in their ensemble as the general normalizing tendencies which reduced the rich Vedic grammar to a simpler and more uniform type.⁸³

Although Pāṇini and his school determined once for all what should be correct Sanskrit, the grammatical activities of succeeding generations of scholars, including the different systems of grammar, were trying to account for deviations from Pāṇini's norm by interpreting his rules in ingenious manner. The fact that these deviations, though minor in their nature, needed this interpretation shows that Sanskrit even as a literary medium was evolving still, despite the importance of Pāṇini, but this evolution was not in line so much with the Old Indo-Aryan stage as with the Middle stage. Nevertheless, the recent *critique* of the grammar of Candragomin by Louis RENOU of the Paris University shows that Sanskrit had developed further than in Pāṇini's time; firstly there is very little of the Vedic grammar in Candragomin; then as regards phonology the new sūtra VI 3 47 posing $-l- < -ḍ-$ exemplified by *valabhī-* and *nāla-* shows that the Vedic phenomenon which was already rare in the Vedic texts, reappeared independently in Sanskrit when Candragomin wrote his grammar. According to RENOU's finding, the notation of Candragomin corresponds to a real usage due to a recent extension of Sanskrit phonology. For further extensions of these innovations I must refer you to his excellent *Études de grammaire sanscrite*—première série (Paris 1936). I only wish to draw attention here to a fact which we must always place before us in dealing with Sanskrit of the classical and epic type:

how much of this innovation is due to the extension by analogy of certain types found only in the Vedic language, and how much due to independent origin? For in the first we see the conservation in the spoken languages of the Vedic and succeeding period of purely OIA. Vedic characteristics, which found a place in the compositions of the later authors, and in the second we shall have to seek the causes either in hypersanskritisation of the first type inherited through the Middle Indo-Aryan stage or due to some causes outside the natural growth of Indo-Aryan such as local influences of linguistic groups other than Indo-Aryan. For a historical survey of Indian linguistics this is of the greatest importance.

Coming to the Middle Indo-Aryan stage we are confronted not with uniformly established facts but linguistic facts in the making, showing the course of tendencies which affect individual members of this group, and which, at the hands of the grammarians, assume, bedged in by the usual caution of partial application (*prāyaḥ, vibhāṣā* etc.), normalizing activities. Thus in the Aśokan Inscriptions we notice that assimilation of consonant clusters has proceeded uniformly with respect to most groups, but in the case of a nexus having *r*, the assimilation is sporadic even in the north-western group where we expect the group to remain unassimilated. Similarly with respect to groups containing a sibilant, a state of affairs very much akin to Pāli of the southern Buddhist canon. Leaving aside these exceptions for the moment, and concentrating only on the preferential development of Middle Indo-Aryan, we notice the following facts:

1. Assimilation of consonant clusters, generally following the lines of greatest resistance: (a) homorganic groups being reduced to the doubled form of the second member and (b) heterorganic groups reduced to the doubled form of the stronger consonant from the point of view of

its occlusion and (c) aspiration of this group if one of the consonants happens to be a sibilant.

2. Loss of vocalic *r*, and the diphthong *ai* and *au*, the first being assimilated to *a*, *i* or *u* according to the nature of the dialect and the circumstances attendant upon this assimilation, the latter being reduced to *e*, *o* or even to *i*, *u*. Reduction of three sibilants to one.
3. Reduction of long vowels to short in front of heavy syllables and the anusvāra.
4. Reduction of intervocalic unvoiced stops first to voiced stops, then spirants of the same class, and finally loss of occlusion.
5. Cerehralization of dentals in the presence of vocalic *r* or its ablaut grade.
6. Palatalisation of dentals in the presence of *y* in consonant groups.

Note: Cerehralization is not so universal in application as palatalization in consonant clusters.

7. Loss of the Dual, and the Dative.
8. Loss of final consonants, with reduction of nominal bases to vowel endings (*sara-* or *sarada-* < OIA *śarat*); hence further reduction of the complicated declensional system of OIA. to the simpler MIA. system.
9. Loss of the middle voice, reduction of the tenses to the present and a few inherited forms of the Imperfect and Aorist; reduction of the moods to the Indicative and a few inherited forms of the Potential and Imperative.
10. Normalizing the verbal bases into the thematic type and extension of *seṭ* forms except in purely inherited *aniṭ* formations.
11. Gradual loss of the declensional system by assimilation

of different cases, ultimately reducing itself to the nominative-accusative or direct case and the oblique case.

None of these changes have taken place uniformly even in the same dialect or at the same time. Thus while Pāli admits of consonantal assimilation in clusters, groups containing *r* or *s* have escaped this treatment in the majority of cases;⁵⁴ intervocalic single consonants are not voiced except in very few cases which are treated rather as exceptions; on the other hand there are instances where Pāli devoices voiced intervocalic stops, sharing somewhat the character of the Piśāca languages as described by Grammarians.⁵⁵ While the loss of intervocalic single stops is common to the literary Prakrits, Śaurasenī differs from Māhārāṣṭrī in voicing -*t*- and -*th*- to -*d*- and -*dh*- respectively, while the history of the cerebral stops is quite different from all other stops, in the entire MIA. It is, therefore, essential to study whenever possible, the chronology of these changes as well as the locality where such phenomena originated, and this is the greatest problem in the history of Indo-Aryan languages. Divorced from the actually current speeches of the period, these literary languages which we have before us present to us time and again in these exceptional forms some idea of the current idiom if we have the means with us to demonstrate that they are not conscious archaisms or solecisms. In these forms we can see, subject to the above remarks, the forces which are at work in the evolution of current linguistic material.

The above summarises briefly the chief factors responsible for the normalizing of Middle Indo-Aryan from the material inherited by it through Old Indo-Aryan. Turning our attention similarly to the New Indo-Aryan stage we observe the following general facts :

1. Gradual reduction and loss of final vowels inherited from MIA. except in very few cases where traces of the final vowel are seen.

2. Preservation of the penultimate vowel in quality.
3. Loss of prepenultimate vowels except in the initial syllables, first through reduction of all vowels to the natural α which is glided over in current pronunciation.
4. Preservation in general of the quality of the initial syllable inherited from MIA.
5. Reduction (except in Panjahi) of the double consonants inherited from MIA. to single consonants with compensatory lengthening of the vowel in the initial syllable (except in Sindhi where the original OIA. quantity of the vowel is preserved).

Note:—This last fact is interesting, showing us that in MIA. the reduction of long vowels before heavy syllables or the anusvāra was not of uniform application. Although the orthography of Aśokan inscriptions does not show us where we should infer a long vowel followed by double consonants, the comparative study of MIA. with NIA. shows us just where such an inference is justifiable. Thus the preservation of the original quantity of initial vowels in Sindhi in such examples as *vāgh^u: cak^u, rāt^a: rat^u, kāth^u: ath^a* presupposes a MIA. stage *vāgg^ho: cakkam* for the first group from OIA. *vyāghrah: cak^hram*; the normalising tendencies would reduce in General MIA. both forms to *vagg^ho: cakkam*. The existence in Panjabi of such forms as *rāt (rātrī)* and *ratt (rakta-)* shows that in the North-Western region the simplification of double consonants is of recent growth, where it had already taken place in the central and southern MIA.

Of great importance, therefore, is the historical consideration of these changes in the development of Indo-Aryan. For a similar type of work in the Indo-European field I may refer here to the work of KURYLOWICZ.³⁸

6. In morphology, increasing use of postpositions to express syntactic relationship in the place of cases already lost.

in the Apabhrāṃśa stage; nominal verb formations for past and future tenses.

For further details I have to refer you to BLOCH's excellent *L' indo-aryen*.

But unlike the Middle Indo-Aryan languages the New Indo-Aryan are increasingly utilizing learned borrowings from the Old Indo-Aryan to express cultural ideas. According to the date of the borrowing the general linguistic characteristic of the vocable will be determined if it has become part and parcel of the common vocabulary and not restricted to the learned circles. Such of the vocables have been subject to the same linguistic forces as the original inherited element. The question here arises why the New Indo-Aryan languages require an increasing number of Sanskrit words while the Middle Indo-Aryan languages excluding the three types of Sanskrit mentioned by me before employ only pure middle Indo-Aryan or Deśī words or at most semi-tatsamas? It will again crop up in the final lecture of this series.

The linguistic studies of scholars in these different branches have shown us the different stages of this evolution of Indo-Aryan in all its three stages considered in their ensemble, but in spite of many attempts it has not been possible to localize the development either in space or time except on very broad lines.

Chronological determination of linguistic factors presents as great a problem as literary history; but within reasonable limits, particularly with reference to dated manuscripts, much is possible. While we can broadly say that an OIA. word belongs either to Vedic or classical Sanskrit, or in the first case to the R̥g Veda or Atharva Veda, or Brāhman̄s, Sūtras, etc., or that it has continued to function from the Vedic to classical and epic Sanskrit, we are not in a position to find out the earliest possible occurrence of any given classical vocable. In fact many

of the common words which we employ in every day usage for articles of food, vegetables, etc. such as for instance Mar. *javār*, are of undetermined antiquity. I have already drawn the attention of scholars to the difficulties encountered in this field, by showing that Mar. *bhoplā* 'pumpkin' is not directly a borrowal from Portuguese *abobra* as suggested by Mgr. DALGADO,⁸⁷ but is inherited from Sanskrit *bahuphalaka*-, although the occurrence of the Sanskrit word is later than its Mar. cognate.⁸⁸ Time is as great a factor in the recording of linguistic change as locality, and unless we can study both with respect to given linguistic factors, the history of the development will not become perfect.

Now, with respect to the vocables which we find in the three stages of Indo-Aryan, the *Petersburg Lexicon* helps us in some measure to trace the continuity of each within the roughly defined periods such as Vedic, Sūtra, classical or lexicographical; the Pāli and Prākṛit lexicons also give us some idea of the period to which each vocable belongs; but due to the imperfection of the texts, and also of the lexicographical activities (we have no *indices verborum* here) these results are not quite satisfactory. With reference to the New Indo-Aryan stage scientific lexicography has yet to make strides, although a few noteworthy efforts at indexing the words of important works are progressing satisfactorily.

It is the object of historical linguistics to study the comparative grammar of a given family of languages, as far as that is possible, within its time and space context. The chronology of the linguistic stages within each attested branch in comparison with similar contemporary changes in cognate branches will give us a clearer insight into the development of a given family than the merely comparative method applied to it.

It is not only necessary to know at what particular period

a certain vocable has entered in a given stage of Indo-Aryan, but also to know where it has first occurred so that both the time and space context may be solved. The main difficulty of Indo-Aryan linguistics lies in the fact that the full means for finding these two are not at our disposal to-day. We may succeed with a few vocables and in a few places; and with the passage of time when further research in the field will place fresh material before us along these lines, we shall probably achieve a greater progress in our historical approach to linguistics.

A few examples will make the problem clearer. The word *kurta* is very common today meaning a kind of shirt or chemise. What is the antiquity of the word in India? One known factor is that it is recorded in Li Yen's *Sanskrit-Chinese Lexicon* completed towards 750 A. D. having cognates in Shina *kurtani* and Burusaski *kurdi*. Li Yen was a Buddhist monk of Koutcha. This will explain the inclusion of a Persian word in a Sanskrit-Chinese Lexicon. As explained by Suniti Kumar CHATTERJI, the importance of this lexicon for understanding both Old and Middle Indo-Aryan vocabulary is very great. To this may be added the factor that the exact date of the author is known.³⁹ Turning in another direction we notice that in TURNER'S *Nepali Dictionary* there are a fairly large number of examples where the Sanskrit cognate of the Nepali and other NIA. vocable is only a word recorded in the lexicons, very often belonging to the last five or six centuries. How are we to determine the time sequence between the different forms given in the etymological equations?

We are here face to face with main difficulty of Indian linguistics. While the three stages of Indo-Aryan developed on a regular inherited basis, the Middle from the Old and the New from the Middle, the continuity of the independent development side by side of three stages in their literary activities (unham-

pered by the doctrines of the grammarians) gave rise to mutual borrowing and influenced the entire vocabulary of each stage. Thus the efforts of scholars like LE'VI and PRZYLUŚKI have shown us that a large number of common names for household articles, etc. are of Austro-Asiatic origin.⁴⁰ Again the hesitation shown by Sk. *kareṇu-*, *kaneru-* etc. has enabled CHATTERJI to connect it with Dravidian.⁴¹ A glance at the Sanskrit Dictionary will convince any scholar of the great number of words which appear to be largely due to Middle Indo-Aryan influence but the problem here is to connect them on the one hand with their true OIA. ascendants and on the other with descendants of these in MIA. Unless we are in a position to determine firstly the relative chronology of the forms we discuss and then the exact chronology for the purpose of verifying the general conclusions which we derive from the preceding discussion, the results will not be of much value.

As I mentioned at the beginning of this lecture, the time has come to make an attempt on these lines to interpret the linguistic development of Indo-Aryan. No work has been done so far in this direction, and the attempt is replete with grave difficulties the nature of which will become apparent in the subsequent lectures. It is necessary at the very outset to point out that I have kept before me two aspects. These lectures should not only present to you some of the results of my own researches into the history of Indo-Aryan, indicating the methods I have employed and the scope of the subjects dealt with, but also show the nature of the problems which need solution on the lines suggested in these lectures. I am convinced that this is the only way in which the object of the Foundation will be served. Linguistics is still a young science in India, and unless the problems which need investigation are indicated the likelihood of the younger generation taking up this study seems to me to be remote. . .

The earlier lectures have dealt with such general subjects as *Introduction to Indian Linguistics* by Prof. R. L. TURNER in 1922² or *Life and Growth of Languages* by Dr. V. S. SUKTHANKAR in 1933,³ that it is not necessary for me to enter into the fundamental assumptions of the subject. The published lectures by Sir Ramkrishna Gopal BHANDARKAR also give both the general principles of comparative grammar and their application to Prakrits and Modern Indo-Aryan languages. I shall assume a knowledge of these principles in my lectures. Only one principle I may indicate here in order to emphasise it properly. In any attempt at classification of the dialects which form part of the Indo-Aryan family it is necessary to remember that the common element in them which in its totality indicates the common origin of the individual members is two-fold; one set is due to conservation and the other due to innovation. While the conservative element shows the common origin of the entire group of languages considered, like the identity of reading in a number of manuscripts of a given text which is thus assumed to be that of the archetype, innovations correspond to the peculiar elements shared in common by some subgroups, like the peculiar readings of a smaller group of manuscripts which is assumed to go back to a sub-archetype, and thus help us in determining the mutual relationship between the different members to a greater degree than pure conservations. Thus in linguistic research, particularly in the sphere of Indo-Aryan where mutual interborrowing has affected the isoglosses to a hopeless extent, search for these innovations and delimiting them to their proper space-time context, will form an important branch of this new approach. The further we are from achieving this end the greater must be the effort towards a clarification of Indian linguistics along the lines which I propose to follow here.

In view of the fact that in lectures of this type all the relevant material cannot be placed before the learned audience

within the time allotted I have to be content with indicating only the important typical cases. Much of this material will be published elsewhere in greater detail and serving a different purpose from that which I have in mind here." Secondly I am not dealing in its completeness with the entire problem of Historical Linguistics applied to the Indo-Aryan branch; it is both beyond my present capacity and the time I have at my disposal. If I succeed in creating a genuine interest in the wider problems which need investigation, and at the same time indicate briefly the methods which may be employed, I shall consider my work as amply rewarded.

I shall not treat you to the water-tight compartments of the linguisticians such as phonology, morphology, syntax, semantics, etc. in dealing with my subject; I am rather taking the bold step of considering the bases of Indo-Aryan and deriving the relevant conclusions which may be of help towards understanding the development of the family. I have indicated the general lines of development of the three stages of Indo-Aryan; it shall now be our endeavour to trace the lines of descent from a consideration of the basic forms. For this purpose the next two lectures will deal with the Verbal Bases of Indo-Aryan; the fourth lecture will deal with the Nominal Stem Formation in Indo-Aryan; the fifth will deal with the problems of historical linguistics arising from all this discussion in their linguistic aspect; the sixth and concluding lecture will deal with Synonymics, the unsolved problems and desiderata in historical linguistics, in the Indo-Aryan field. In this manner we shall have touched in a general way the vast field of Historical Linguistics which awaits careful investigation by Indian scholars and which promises to bring the bome of scientific grammar once more to the forefront in its modern formulations.

LECTURE II

THE VERBAL BASES OF INDO-ARYAN

PART I

OF the different elements which go to form the entire vocabulary of Indo-Aryan the verbal bases have an undisputed importance of their own. Already in the *Nirukta* we find a discussion of their importance as a possible source of all types of nouns.¹ Again in the different systems of Sanskrit Grammar the DHATUPATHA is invariably considered as a necessary concomitant of the SUTRA and GANAPATHAS, and thus we have the root-lists belonging to the grammars of Pāṇini (commented upon by Kṣīrasvāmin,² Sāyaṇa³ and Maitreyaraksita⁴), Śarvavarman,⁵ Candragomin,⁶ Sākaṭāyana⁷ and Hemacandra.⁸ In Pāli again we have the root-lists *Dhātupāṭha*, *Dhātumāñjūsā*⁹ and the second section of *Saddanūti* entitled *Dhātumālā*;¹⁰ in the Prakrits a large number of Dhātvādeśas are listed together by practically all the Prakrit Grammarians.¹¹ In their totality these verbal bases do not exceed the figure of 3,000 for each attested stage of Indo-Aryan. It is thus possible to consider their history and comparative development to a greater extent than of other types of vocables, for these alone provide for us today well assembled and properly sifted material for a historical approach to linguistics.

First and foremost among the aids we have for a history of Old Indo-Aryan in all its aspects is the magnificent thesaurus of authentic information respecting the Sanskrit language of every period, the great *St. Petersburg Lexicon* of BÖHTLINGK and ROTH¹² as WHITNEY puts it.¹³ The material contained within this Lexicon has been utilized by WHITNEY in his classical *Roots, Verb-Forms and Primary Derivatives of the Sanskrit language*, a work which is equally indispen-

sable in its own field. Much of the earliest work in Vedic Philology was connected with the Verbal Aspect of OIA., as instanced by the monographs of DELBRÜCK,¹³ EDGREN,¹⁴ AVERY¹⁵ and NEGELEIN.¹⁶ Perhaps one of the first attempts at lexicography was connected with the Sanskrit Verb, for we have in 1841 WESTERGAARD'S *Radices Linguae Sanscritae* giving not only all the roots of Pāṇini's Dhātupāṭha arranged alphabetically after dividing them first according to the final syllable, citing where possible from the literature then accessible—microscopic compared to that utilized by BÖHTLINGK and ROTH—all the different quotable forms. Two years before this, in 1839 DELIUS published his *Radices Pracriticae* as a supplement to LASSEN'S *Institutiones Linguae Pracriticae* (1837), treating the Prakrit roots in a parallel manner, long before BENFEY published his *Sāmaveda-Glossar* in 1848. More recently the sustained but brilliant work of Professor Brunn LIEBICH¹⁷ has thrown much welcome light on the Indian grammatical systems, including the Dhātupāṭhas. Thus the verbal bases have played an important rôle in the development of comparative grammar, and recent research in the Indo-European field is establishing an almost novel conception of the root.

Within the field of our enquiry we can trace the Verbal Bases of Indo-Aryan in their various stages, in their different aspects, studying the development of the language through them. In his work WHITNEY divides the verbal bases of Sanskrit into the following categories: V (eda), B (rāhmaṇa), the earlier or more genuine U (pañśads), S (ūtra), E (pics) and C (lassical). These may again be divided into two main groups A comprising V, B, U and S—and C comprising the classical and Epic languages.

Much adverse criticism has been levelled against the Indian Dhātupāṭhas: most of these contain over 2,000 roots

classified according to their conjugational peculiarities. According to the computation of WHITNEY there are just 1136 roots which are met with in Sanskrit literature of all periods; the roots other than these should, therefore, be considered as mere extensions of existing bases or artificial creations of the grammarians. Only these roots, according to such a view, may be considered as forming part of the vocabulary of Indo-Aryan.

Before proceeding to the actual study of our subject we may pause here to consider the nature of the vocabulary which languages have in their historical development. There is first the inherited element; Sanskrit with Prakrits, forming the Indo-Aryan family, is a sub-branch of the Indo-Iranian family, itself a member of the extensive Indo-European group. As such Indo-Aryan will inherit a certain number of vocables from Indo-European through the Indo-Iranian stage: in addition Indo-Iranian itself may have created fresh formations outside the general development of Indo-European which may be considered to be new creations within the Indo-Iranian period; thirdly there may be a certain element borrowed from non-Indo-European families of languages; thus the inherited element of Indo-Aryan may consist of all these three types of vocables;¹⁹ linguistic development being a continuous activity, Indo-Aryan in itself will have a certain portion of new creations and a certain proportion of fresh loans from non-Indo-Aryan languages. The need for fresh creation is always felt when certain vocables become obsolete or in their evolution change semantically, requiring other vocables to signify ideas or things which they themselves signified in their primary stage. Thus the vocables of a given family of languages may first be divided into three groups: vocables which continue to exist in all the attested stages known; vocables which are peculiar to the earliest stage only and vocables peculiar only to the later stage.

If we are considering the history of Indo-Aryan in any two of its contiguous stages, we have (A) elements common to the earlier stage, (B) elements common to both stages and (C) elements common to the later stage, in their different evolutions. This division could be applied even to one stage such as the Old Indo-Aryan, if we divide this into several well-defined periods. Thus WHITNEY considers the Vedas, Brāhmaṇas, Upaniṣads and Sūtras to form the earlier period of Sanskrit and the Epics and Classical Sanskrit to the later period. Accordingly his roots are divided into (A) or bases found only in the earlier language; (B) Bases found in both the earlier and the later language; and (C) bases found in the later language only. Thus out of the 1136 verbal bases which he notices in his work as quotable stems, he analyses 143 as belonging to the root or *ad*-class, 49 to the reduplicating or *hu*-class, 29 to the nasal or *rudh*-class, 50 to the *nu*- or *su*-class, 8 to the *u*- or *tan*-class, 53 to the *nā*- or *krī*-class, 529 to the *a*- (unaccented) or *bhū*-class, 142 to the *ā*- (accented) or *tud*-class and 133 to the *ya*- or *div*-class. The following table gives the classification of these bases into three groups mentioned above:—

Class		A	B	C	Total
<i>ad</i> -	II	80	49	14	143
<i>hu</i> -	III	33	16		49
<i>rudh</i> -	VII	16	13		29
<i>su</i> -	V	24	22	4	50
<i>tan</i> -	VIII	4	4		8
<i>krī</i> -	IX	31	17	5	53
<i>bhū</i> -	I	175	212	142	529
<i>tud</i> -	VI	72	53	17	142
<i>div</i> -	IV	41	64	28	133

From this table we can further compute the number of roots in the later language by adding the figures in columns

B and *C* and compare these figures with those in Pāṇini's Dhātupāṭha:—

Class		BC	Pāṇini	Total no. Whitney
<i>ad-</i>	II	63	72	143
<i>hu-</i>	III	16	25	49
<i>rudh-</i>	VII	13	25	29
<i>su-</i>	V	26	34	50
<i>tan-</i>	VIII	4	10	8
<i>krī-</i>	IX	22	61	53
<i>bhū-</i>	I	356	1059	529
<i>tud-</i>	VI	70	143	142
<i>div-</i>	IV	92	136	133
TOTALS:		662	1565	1136

Of the causative stems actually quotable in the language WHITNEY gives 555 divided into (A) 100, (B) 231 and (C) 190, (D) 33 with *-pa* and *E* (II) with *-apaya* yielding 465 as found altogether in the later period. Now Pāṇini's Dhātupāṭha recognizes 395 roots belonging to the 10th conjugation, and theoretically all the 1565 roots enumerated above are capable of having causal stems extended from the simplicia. Leaving these causal bases, we get approximately 1960 verbal bases enumerated by the Dhātupāṭha. It is necessary, therefore, to consider the development of these verbal bases in their historical evolution as far as that is known to us from the existing literature.

We have on the one hand to take into account the inherited Indo-European element in these verbal bases which may survive (a) only in the verbal bases peculiar to the earlier stage of the language, or (b) in some vocables common to both stages of the language or finally in (c) the later formations of classical or epic Sanskrit. I have already referred in the introductory lecture to the fact that Middle Indo-Aryan may inherit directly IE vocables not recorded in the OIA stage. The recent paper

of Prof. Louis H. GRAY on the IE etymologies of fifteen Prakrit words (JAOS 60.) shows that this inherited element may be found in fairly late Prakrits also, though not leaving any direct trace in Sanskrit, Vedic or Classical. On the other hand we have to investigate the genesis of verbal bases which are not strictly inherited from the IE stage, but are (a) either extensions of such verbal bases or (b) new formations within the IA period. These new formations may be either due to the incorporation of dialectical developments of the previously inherited IE or II vocables or borrowings from the local non-Aryan dialects. For this purpose a study merely of the OIA verbal bases will not suffice; it is necessary to take into account the roots of the Middle Indo-Aryan as well, for it is only thus that the gradual extension of the Sanskrit vocabulary may be understood in its historical perspective. Indeed a thorough investigation requires (1) an inclusion of the New Indo-Aryan verbal bases in this study as well as (2) consideration of the Dravidian and other non-Aryan families in the case of vocables which do not fall naturally within the Aryan domain. A comparative study of Old and Middle Indo-Aryan bases has not been attempted so far, and my own investigations in the field have not yet been completed in all their detail, but a few of the results arising from that analysis will be placed before you here.

It is sometimes difficult to assign a given base to any well defined period, for there are examples of bases found only in the Rgveda, occurring later in Classical Sanskrit, without any quotable example being found in the intervening period. In such cases I have indicated the base both in A and C without giving it the characteristic of B to which category it should really belong if its history were continuous. I give below a list of

- OIA verbal bases derived from the common IE stock as witnessed by cognates occurring in other attested branches of this family, recorded in WALDE-POKORNY'S dictionary. Further

research is bound to increase this stock. as witnessed by Prof. GRAY'S paper referred to above :—

GROUP A :—

at-, ¹am-, ¹i-, ²il-, ¹iṣ-, uc-, und-, ubh-, umbh-, ūh-, (ob-),
²ī-, rōj-, ṛṇ-, eṣ-, ku-, ²kṛ-, ²kṛt-, kṛp-, kṛṣ- krūd-, ²kṣi-,
 kṣai-, kṣṇu-, ²gā-, ¹gu-, gurd-, gr-, grbh-, ¹ghṛ-, cat-, ci-, cāy-,
 cṛt-, cho-, ²jas-, jinv-, jū-, jūr-, jūrv-, jri-, tamś-, ²tañc-,
 tand-, tard-, tu-, tuc-, tuñj-, tūrv-, tūr-, tṛd-, tṛmp-, tṛṣ-,
 tuś-, tej-, tvakṣ-, tviṣ-, tsar-, thurv-, dakṣ-, dagb-, dam-,
 dambh-, das-, ²dā-, dās-, dās-, dī-, dīdhi-, dṛmh-, drbh-, dṛh-,
 div-, do-, drā-, dhan-, dhanv-, dbūrv-, dbraj-, ²dhvan-, dhvṛ-,
 nakṣ-, nabh-, nimś-, piś-, piuv-, pūy-, pūr-, pṛc-, pṛ-, prā-,
 pru-, proth-, barh-, brmh-, bṛh-, bhan-, bhand-, bhav-,
 bhīṣaj-, bhūṣ-, bhyas-, bhri-, bhreṣ-, mamh-, mand-, may-,
 marc-, ²mā-, miv-, mṛkṣ-, mṛṇ-, mṛdb-, meth-, med-, yakṣ-,
 yabh-, yeṣ-, ramh-, rad-, radh-, randh-, rap-, raph-, ramb-,
 rikh-, ric-, riś-, roṣ-, rih-, rup-, ²ruṣ-, rej-, rai-, liś-, van-,
 vindh-, viṣ-, vṛj-, ven-, śundh-, śrath-, śrantb-, śrī-, śrā-,
 śvañc-, śvi-, sagh-, sac-, saj-, san-, sap-, saśc-, sādth-, si-,
²sū-, sūrks-, skabh-, stigh-, stubh-, stai-, spaś-, spūrdh-, spr-,
 srīlv-, svid-, svṛ-, ḥiḥ-, hurch-, hru-, bvar-. [=171 Bases]

GROUP B :—

añc-, añj-, ad-, an-, arc-, arj-, ard-, arb-, av-, ¹,²aś-,
¹,²as-, āp-, āś-, ²i-, indh-, ²iṣ-, iś-, ih-, ukṣ-, us-,
 ṛch-, ṛdh-, ej-, edh-, kamp-, kaṣ-, kāñkṣ-, kās-, kuc-, kūj-,
 kūd-, ¹kṛ-, kṛt-, ¹kṛ-, kḷp-, krand-, kram-, krī-, krīd-, krus-,
 kvāth-, kṣaṇ-, kṣai-, kṣiṇ-, kṣip-, kṣu-, kṣud-, khan-, khād-,
²kbid-, gam-, ¹garh-, gāh-, gur-, gūh-, gr-, grdh-, grb-, gr-,
²granth-, ¹grab-, glā-, ghuṣ-, ghrā-, cakṣ-, ¹chad-, chand-,
 chid-, ²jan-, jambh-, jāgr-, ¹,²ji-, jiv-, ²juṣ-, jṛ-, jōap-, jñā-,
 jvar-, jval-, tan-, ²tap-, tan-, tud-, tund-, tuṣ-, tṛp-, tṛ-,
 trap-, tras-, trai-, tvac-, tvar-, damś-, day-, daridrā-, dah-,

¹dā-, div-, diś-, dīkṣ-, dīp-, du-, duṣ-, dū-, drś-, dyut-, ¹dru-,
druh-, dviṣ-, dhmā-, dhā-, dhī-, dhṛ-, dhṛṣ-, dhe-, dhyai-,
dhvaṁs-, nam-, nay-, nāth-, nādh-, nind-, nu-, nud-, nṛt-,
pac-, paṭ-, paṭh-, paṇ-, pat-, pad-, ¹pā-, piṣ-, pī-, pīd-,
²puṣ-, pū-, pyāy-, prach-, prath-, prī-, plu-, hadh-, bādh-,
budh-, brū-, bhaj-, bhañj-, bhaṇ-, bharts-, bhā-, bhās-,
bhikṣ-, bhid-, bhī-, bhuj-, bhū-, bhṛ-, bhramś-, bhrajj-,
²bhram-, bhrāj-, majj-, mad-, man-, manth-, ¹mā-, mi-,
miṣ-, mib-, ²mī-, mīl-, muñc-, mud-, mūrch-, muṣ-, mṛ-,
mṛj-, mṛḍ-, mṛḍ-, mṛś-, mṛṣ-, mlai-, yam-, yat-, yas-, yāc-,
²yu-, ¹yuj-, yudh-, rakṣ-, raj-, rabh-, ram-, ras-, rāj-,
rādh-, ru-, ruc-, ruj-, rud-, rudh-, ruh-, rebh-, lajj-, lap-,
labh-, lamb-, limp-, līh-, lī-, lup-, lubh-, lok-, loc-, vac-,
vañc-, vad-, vadh-, vand-, vap-, vam-, valg-, vaś-, ^{1,2}vas-,
vah-, vā-, vāñch-, vās-, vāsa-, vic-, vij-, vid-, vip-, viś-,
viṣ-, vī-, vṛ-, vṛt-, vṛdh-, vep-, veṣṭ-, vai-, vyath-,
vyadh-, vraj-, vraśc-, śains-, śak-, śank-, śam-, śas-, śāta-,
śās-, śikṣ-, śī-, śuc-, śudh-, śuṣ-, śṛdh-, śṛ-, śo-, śnath-,
śram-, śri-, śru-, śvas-, ṣṭbiv-, sad-, sah-, siñc-, sidh-, siv-,
su-, sū-, sūd-, sṛ-, srj-, sṛp-, so-, skhal-, stan-, stu-, stṛ-,
styai-, sthā-, snā-, snu-, spand-, spardh-, sprh-, spbuṭ-,
sphur-, spbṛju-, smi-, smṛ-, sranis-, sru-, svañj-, svad-,
svap-, svara-, han-, has-, hā-, hi-, hims-, binv-, bṛ-, hras-,
brād-, hval-, bve-. [=318 Bases]

GROUP C :—

iñg-, ūh-, kak-, kakkh-, kakh-, kañc-, katth-, katha-,
karj-, kala-, kāś-, kiṭ-, kuñc-, kuñj-, ²kuṇḍ-, kuts-, kuth-,
¹kup-, kurd-, kuṣ-, kūṇ-, knūy-, kmar-, kruñc-, klam-, klid-,
²kliś-, ¹kṣī-, kṣīv-, ¹kṣvid-, ¹kṣvid-, khakkh-, khac-, khaj-,
khañj-, garj-, ¹gal-, guñj-, ²gū-, ¹ghaṭ-, ghrṣ-, cand-, carb-,
¹carv-, cūṣ-, ²chad-, chard-, jaj-, jan-, jabh-, tañg-, tark-,
¹tarj-, tuj-, tup-, tump-, tul-, truṭ-, tvakṣ-, tvis-, dal-, dul-,
div-, dram-, drāgh-, dhor-, dhram-, dhvaj-, ¹dhvan-, naṭ-, paṭ-,

pay-, pard-, pal-, piñj-, puṭ-, puṣp-, ¹pr-, pras-, pluṣ-, phal-,
 bainh-, bandh-, bukk-, bhakṣ-, hhand-, bhūsa-, bharja-,
 bhrāś-, mac-, mañc-, mil-, muj-, muōj-, mū-, mṛkṣ-, mṛg-,
 mṛñj-, rañg-, rañgh-, rac-, rah-, riñkh-, ring-, ruś-, ²ruṣ-,
 lag-, laṣ-, las-, luñc-, lul-, vañg-, vay-, val-, vell-, veh-,
 vyay-, vṛid-, śik-, śibh-, śnath-. [=122 Bases].

This then represents approximately the IE stock of the verbal bases within the Old Indo-Aryan field; these bases may be considered as regular inherited IE forms, requiring in general no further information regarding their nature. When we deal with the question of the genesis of the remaining verbal bases which do not come within the IE field, it will be necessary once again to turn to these bases and find some parallelism in the new formations within the Indo-Aryan period.

Before proceeding to a discussion of the remaining bases of OIA we may consider the full significance of the above classification. The IE inherited element is preserved in a three-fold manner in the history of OIA. The first group A represents the earliest inherited element which became obsolete gradually, being supplanted later by some younger synonymic bases; or else the form of the base in morphology changed to another type in the younger language, thus giving rise to a parallel formation with the same base. This would determine a new type of base although it possessed the same form as the older one except in morphology. The second group represents to a very large extent the stable element of IE which remains unchanged so far as any major transformation is concerned in the entire history of OIA. There is a regular handling of these bases throughout the IA period in its primary stage. What is the explanation of the third set? How did IE find its way in a later stage of the language when corresponding elements are not found in the earlier stage?" For language is a continuum,

and the inherited element from the earliest parent must come in general through either the immediate ascendant or through borrowal from a cognate contemporary or slightly earlier language derived independently through the original parent stock. Now with regard to OIA the only sources would be either the Iranian branch or the Greek contacts from the third century B. C. Thus one of the problems which needs investigation and which I should like to mention to you at this stage is the possible relationship existing between the bases of this class C and their Greek and Iranian cognates from the historical point. This would require in the first instance a possible early date for the bases under discussion from actually known datable records of Iranian and Greek in relation to the evolution of these bases in IA. A second aspect of this derivation is the generally accepted fact that the IA literary languages do not actually reflect the vernaculars of their day, but only a highly cultivated and stylised norm; vocables preserved in the OIA vernaculars can be handed down from generation to generation without end, subject only to the normal development of phonology and morphology. This fact is borne out by the existence in Pāli and other MIA dialects of IE vocables not found in IA in its earlier stage. Then the question arises as to the manner in which the C class of the IE inherited bases comes into actual existence. Here we have for comparison the actually current verbal cognates of Pāli and the Prakrits with approximately determinable dates. If the OIA base is anterior in general to the MIA from the literary facts known to us then the possibility lies in the first direction; if on the other hand it is posterior, it may either be due to hypersanskritisation of the MIA base or a loan word.³⁰

We are not concerned with the problem of loan-words in our present discussion, for the subject requires not only a detailed knowledge of IA comparative grammar, but also an equally

detailed knowledge of the laws of transformation from Iranian or Greek of a given period into its cootemporary OIA. And throughout, the historical perspective which is still on slender-foundations has to be kept in view.

The characteristic of the IA base consists of its capacity to form different classes or types in actual morphological usage and in the voice affected by it. It would be interesting, in view especially of the development of the single voice in MIA, to study this phenomenon before investigating the different types of the base in morphology. The change of voice may be considered in the followiog light: a base in the active voice, attested throughout the IA period from Vedic down-words, may show the middle voice only in the later period side by side with the active forms inherited from the earlier period, or the situation may be the opposite of it. A third set of bases shows both voices simultaneously in the same period of the language. Accordingly I am giving below this threefold classification of the IA bases as found entirely in WHITNEY'S *Roots*:

I. ACTIVE TO MIDDLE:—

A	B	C	A	B	C
ákṣat (rv)		akṣase (e)	karṣate		
ácati (vb):			krándati	krandate	
acate (vbs.)			krúdhyati	krudhyate	
	árhati	arhate (e)	krósati	krośate	
asyate	ásyati		kṣárati	kṣarate	
	āpnóti	āpnute (e)	kṣipáti	kṣipate	
	ṛcchati	ṛcchate	glāyati	glāyate	
	kūjate	kūjate	céṣṭati	ceṣṭate	
	kṛntáti	kṛntate	chṛnatti	chṛntte	
	kárṣati:		jápati	japate	

A	B	C
jālpāti	jālpate	
jīvāti	jīvate	
jvālāti	jvalate	
tāmyāti	tāmyate	
tudāti	tudate	
tusyāti	tusyate	
trpyāti	trpyate	
tyajāti	tyajate	
trāsāti	trasate	
dāhāti	dahate	
disāti	disate	
	(rv ; e)	
dīvyāti	dīvyate	
duśyāti	duśyate	
drūhyāti	druhyate	
dhāmati	dhamate	
dhyāyāti	dhyāyate	
nādāti	nadate	
nāndāti	nandate	
nardāti	nardate	
nāśyāti	nāśyate	
nīndāti	nindate	
nṛtyāti	nṛtyate	
nedāti	nedate	
paṭbāti	paṭhate	
pātāti	patate	
pūśyāti	puśyate	

A	B	C
pūyāti	pūyate	
bhāśāti	bhāśate	
bhināti	bbintte	
bhāvāti	bhavate	
bhrjjāti	bhrjjate	
bhramāti	bhramate	
mājjāti	majjate	
mathnāti	mathnīte	
	(bB)	
mānthāti	manthate	
mināti	minute	
miśāti	miśate	
mēhāti	mehate	
mīlāti	mīlate	
mūhyāti	muhyate	
māyāti	māyate	
rājāti	rājate	
rīṇākti	riṅkte	
rīsyāti	riśyate	
rujāti	rujate	
lapāti	lapate	
likhāti	likhate	
līpāti	līpate	
lēdhi	līdhe	
lūpāti	lūpate	
vāñcati	vañcate	
vālgāti	valgate	

A	B	C
vásati	vasate	
váyati	vayate	
vāyati	vāyate	
vījati	vījate	
várṣati	varṣate	
vídhyati	vidhyate	
vrájati	vrajate	
śātáyati	śātayate	
śapati	śapate	
śudhyati	śudhyate	
śyāyati	śyāyate	
śliṣyati	śliṣyate	
sácati(rv)	sacate(v.h.)	
sájati	sajate	

A	B	C
sīdati	sīdate	
sédhati	sedhate	
sídhyati	sidhyate	
sárpati	sarpate	
skándati	skandate	
stanati	stanate	
snauti	snute	
sprśáti	sprśate	
sphuráti	sphurate	
srávati	sravate	
hásati	hasate	
hṛṣyati	hṛṣyate	
heṣyati	heṣate	
hválati	hvalate	

II. MIDDLE TO ACTIVE:—

A or B	C
āste	āsti
īñkhate	īñkhati
īhate	īhati
kampate	kampati
kāsate	kāsati
kṣápatē	kṣapati
kṣámate	kṣamati
garhate	garhati
gāhate	gāhati
guráte	gurati
grásate	grasati

A or B	C
cyávate	cyavati
juśáte	juāṣti
jṛmhbhate	jṛmhbhati
trapate	trapati
tvárate	tvarati
dīpyate	dīpyati
dyótate	dyotati
nāthate	nāthati
pañate	pañati
pádyate	padyati
plávate	plavati

A or B	C	A or B	C
bād ^h hate	bād ^h hati	vṛṇ ^t té	vṛṇ ^t āti
búd ^h hyate	bud ^h hati	vártate	vartati
bhā ^s sate	bhā ^s sati	vyá ^h hate	vyathati
bhī ^k sate	bhik ^s sati	śā ⁿ cate	śā ⁿ kati
bhrām ^s sate	bhram ^s sati	śī ^y ate	śī ^y ati
bhrē ^s sate	bhre ^s sati	śrá ^y ate	śrá ^y ati
mā ⁿ yate	manyati	ślā ^g hate	ślā ^g hati
mód ^a te	modati	sā ^h hate	sahati
mṛ ^s syate	mṛ ^s syati	sī ^v yate	sī ^v yati
rā ^b hate	rab ^h ati	sū ^y ate	sū ^y ati
róc ^a te	rocatī	sév ^a te	sevatī
lā ^b hate	lab ^h ati	skhalate	skhalati
lambate	lambati	spandate	spandati
lī ^y ate	lī ^y ati	smáy ^a te	smayati
vā ⁿ d ^a te	vandati	syā ⁿ d ^a te	syandati
vā ^s yate	vā ^s yati	srām ^s sate	sram ^s sati
vijá ^a te	vijati	sváj ^a te	svajati
vid ^h hate	vid ^h hāti	hnuté	hnauti
vép ^a te	vepatī		

III. BOTH VOICES ATTESTED IN THE SAME PERIOD :—

A	B	C
ác ^a ti,-te	áj ^a ti,-te	at ^a ti,-te
án ^a ti,-te	án ^a kti, añ ^k té	ās ^a ti,-te
amī ^t i, amā ^t e	ás ⁿ ó ^t i,-nuté	in ^g ati,-te
ī ^s ate,-ti	ás ⁿ ā ^t i,-nīte	e ^s ati,-te
ṛ ⁿ ó ^t i, ṛ ⁿ ve.	é ^t i,-ité	ū ^h ati,-te
ṛ ⁿ já ^t i,-te	áy ^a ti, ayate	kat ^h hate,-ti
ār ^s ati,-se	ṛ ^d hyate,-ti	kās ^a te,-ti

A	B	C
kr̥ṇóti, -nuté	icháti, -te	kuñcate, kucati
ksódati, -te	íṣyati, -te	kupyati, -te
gr̥hnāti, -nité	īksate, -ti	kūrdati, -te
cétati, cétante	ukṣáti, -te	klidyati, -te
códati, -te	ūhati, -te	kliśyati, -te
cyávate, -ti	éhate, -ti	kṣubhyati, -te
jánati, -te	kaṣati, -te	garjati, -te
jínvati, -te	kāñksati, -te	ghaṭate, -ti
juṣáte, -ti	karóti, kuruté	ghūrṇati, -te
jīnāti, jīyate	kiráti, -te	gharṣati, -te
gyótati, -te	kṛntáti, -te	cakṣate, -ti
tuñjānti, tuñjate	kṛṣáti, -te	calati, -te
tiráti, -te	krāmāti, -te	cumbati, -te
turáti, -te	kr̥ṇāti, -nité	cyavate, -ti
titarti, tarute	kr̥ṇāti, -te	chādayati, -te
tr̥nāti, tr̥nte	krósati, -te	jāyate, -ti
dákṣate, -ti	kvathati, -te	jalpati, -te
disáti, -te	kṣaṇóti, -nuté	jivati, -te
dīyati, -dīyase	khánati, -te	juṣati, -te
dīdyati, -te	gácchati, -te	jīryati, -te
dr̥mhati, -te	gāyati, -te	jānati, -te
nákṣati, -te	gūhati, -te	jvalati, -te
násati, -te	gr̥māti, -te	tāmyati, -te
návate, -ti	gr̥hnāti, -nité	tarkayati, -te
nedati, -te	ghósati, -te	tarjati, -te
pádyate, -ti	cáratī, -te	tudati, -te
pipatu, pipīte	cinóti, -nuté	tuśyati, -te
pinvati, -te	cintayati, -te	tr̥pyati, -te
pinśáti, -te	céstati, -te	tyajati, -te
pináṣti, pinśe		trapate, -ti
pūyati, -te		trasati, -te
		tvarate, -ti

A	B	C
pr̥nāti, -te	jápati, -te	daśati, -te
pr̥nākti, pr̥nkté	jáyati, -te	dahati, -te
pruṣṇuvānti, -nute	j̥mbhate, -ti	disati, -te
badhnāti, -nité	jānāti, -nité	dīpyate, -ti
br̥mhāti, -te	tanóti, -nuté	devati, -te
bibhēti, bhāyate	tāpati, -te	duṣyati, -te
bhrāmsate, -ti	tāpyati, -te	duhyati, -te
bhṛṣati, -te	tāraṭi, -te	dyotate, -ti
mathnāti, -nité	dādāti, datte	dravati, -te
mānthati, -te	dādāti, -te	druhyati, -te
mādati, -te	dīvyati, -te	dviṣati, -te
māndati, -te	dogdhi, dugdhé	dhamati, -te
minóti, -nuté	dvēṣti, dviṣté	dhyāyati, -te
methati, -te	dādhāti, dhatté	nadati, -te
mināti, aminanta	dhāvati, -te	nandati, -te
mīlati, -te	dhūnóti, -nuté	nardati, -te
maranti, mārāte	dhunoti, -nute	naśyati, -te
mṛḍāti, -ase	dhvaṁsati, -te	nāthate, -ti
mṛḍnāti, -nīta	nāmati, -te	nindati, -te
manati, -te	nāhyati, -te	nṛtyati, -te
yaūti, yuté	nāyati, -te	paṭhāti, -te
yuvāti, -te	nudāti, -te	paṇate, -ti
rāmbhate, -ti	pācati, -te	patati, -te
rajyati, -te	pāśyati, -te	puṣyati, -te
rādāti, -te	pībati, -te	priyate, -ti
rināti, -nīte	punāti, -nité	phalati, -te
likhāti, -te	pr̥chāti, -te	bādhate, -ti
vanóti, -nuté	prāthate, -ti	budhyate, -ti
vānati, -te	prīnāti, -nité	bodhati, -te
valhati, -te	plāvate, -ti	bhakṣati, -te
vidāti, -te		bhaṣati, -te
		bhāṣate, -ti

A	B	C
vidhāti,-te	hrāvīti, brūtē	bhāsati,-te
vidāyati,-te	bhājati,-te	bhikṣate,-ti
vārati,-te	bhāvati,-te	bhinatti, hintte
vr̥ṇākti, vr̥ṇktē	bhārati,-te	bhuñjati,-te
śātāyati,-te	bhrājati,-te	bbramati,-te
śundhati,-te	mānyate,-ti	majjati,-te
śardhati,-te	muñcāti,-te	mandati,-te
śrīṇāti,-nītē	mūhyati,-te	mathati,-te
ślīṣyati,-te	mṛṣati,-te	mārgati,-te
sācate,-ti	mārṣti mṛṣtē	misati,-te
sāscasi, sāśce	yājati,-te	mehati,-te
sājati,-te	yātate,-ti	modate,-ti
sīdati,-te	yāchati,-te	maṇḍati,-te
sāpati,-te	yācati,-te	mṛṣyati,-te
sādhati,-te	yunākti,-nkte	mlāyati,-te
sīvyati,-te	yūdhyati,-te	yamati,-te
sūte, sauti	rākṣati,-te	yāti, yāmabe
suvāti,-te	rābhate,-ti	yuñjati,-te
sévate,-ti	rāmate,-ti	rajati,-te
stunvanti, stuṣé	rasati,-te	rambhati,-te
spṛṇoti,-pute	rādhyati,-te	rājati,-te
svājate,-ti	ravati,-te	rāsati,-te
jīghnate,-ti	rudati,-te	riṇyati,-te
hāryati,-te	rodati,-te	riṣyati,-te
hinóti, hinvé	ruṇaddhi, runddhe	rocate,-ti
-hvarant, hvárate	rundhati,-te	rujati,-te
	róhati,-te	ruṣyati,-te
	límpāti,-te	ruhati,-te
	lumpāti,-te	lakṣate,-ti
	vādati,-te	laṅgbati,-te
	vāpati,-te	lajjate,-ti
		lapati,-te

A	B	C
	vásati,-te	labhate,-ti
	váhati,-te	lambate,-ti
	váyati,-te	lalati,-te
	vindáté,-ti	lašati,-te
	visáti,-te	lasati,-te
	vr̥ṇóti,-nuté	ledhi, lidhe
	vártate,-ti	liyate,-ti
	vyáyati,-te	luṭhati,-te
	śamsati,-te	vandate,-ti
	śápati,-te	valati,-te
	śamyati,-te	valgati,-te
	śísāti,-śīte	vāyati,-te
	śāsti,-te	vāsati,-te
	śócati,-te	vijate,-ti
	śrayati,-te	vidati,-te
	śr̥ṇóti,-nuté	vepate,-ti
	śva'sati,-te	vījati,-te
	sya'ti,-te	vr̥ṇīte,-nāti
	siñca'ti,-te	vr̥ṇoti,-nute
	sédhati,-te	varṣati,-te
	sunóti,-nuté	vyathate,-ti
	sr̥ja'ti,-te	vidhyati,-te
	staúti, stute	vyayati,-te
	str̥ṇāti,-nīté	vrajati,-te
	str̥ṇóti,-nuté	śaṅkate,-ti
	tīṣṭhati,-te	śayate,-ti
	spṛśa'ti,-te	śudhyati,-te
	sphura'ti,-te	śobhate,-ti
	sma'rati,-te	śusyati,-te
	sva'dati,-te	śyāyati,-te
	hanti, hate	ślathati,-te
		śramati,-te

A	B	C
	himsati,-te	staghate,-ti
	juhóti,-huté	sahate,-ti
	hva'yati,-te	sidhyati,-te
	ha'rati,-te	sūyate,-ti
	hrasati,-te	sarati,-te
		sarpati,-te
		skundati,-te
		stanati,-se
		snihyati,-te
		spandate,-ti
		spardhate,-ti
		smayate,-ti
		syandate,-ti
		srañsati,-te
		sravati,-te
		svanati,-te
		svapati,-te
		svidyati,-te
		hadati,-te
		hasati,-te
		hikkati,-te
		hr̥syati,-te
		heṣati,-te
		hnute, hnauti
		hresati,-te
		hvalati,-te

It has already been remarked by WHITNEY in his *Grammar* that 'in the epics there is much effacement of the distinction between active and middle, the choice of voice being very often determined by metrical considerations alone' (529, p. 527). Most of the changes enumerated by him from active to middle or vice versa are quoted from the epics; the residuum

alone is from sources other than the epics. It is thus a matter of importance to study the epic variants with reference to the voice, and determine on a statistical basis the distribution of the voice according to the manuscripts as well as the metrical necessities so determined. It will help us in the investigations of the metrical development of the epics on the one hand, and of epic linguistics on the other.

For our present purpose it is not necessary to go into that question at all, but to notice here the possibility of this change; it is not an absolute change in that the change of voice is fixed; we only observe thereby that the first occurrence of the changed voice is found in quotable forms of that period while the original voice is preserved in practically most of the cases. It is this confusion which ultimately determines once for all the merging of the two voices which had already lost their original significance in the epic literature of the transitive and reflexive meaning. In this process the roots of the fourth group or *div*-class play an important rôle: with the accent on the base we have the active form and with the accent on *-yā-* we have the passive form in the middle voice; while the relation between these two forms is the same as between the *bhū-* and *tud-*classes, the voice of the *-yā-* class is always middle; thus originally the confusion in the later middle forms may be due to the influence of these forms. A large number of the examples of this change from active to middle under group I discussed above is from the *div*-class.

Let us next consider briefly the different types of bases which we get in morphology from an original verbal root.

1. (2) *ātti* B : *adasva* (1) Ce
2. (2) *āniti* B : (1) *ānati* A : (6) *anāti* A
3. (2) *amīṣi* A : (1) *āme* A : *āmayati* (10) Dh. : *amati* 'goes' Dh.

4. (2) *éti* B : (1) *áyate* B : (4) *íyate* B : (5) *inóti* A : Dh. (2) only; cf. Dh. *ay*-(1) recorded separately.
5. (6) *iccháti* B : (1)-*eṣati* C : (4)-*iṣyati* C.
6. (9) *iṣṇāti* A : (4) *iṣati* B : (6) *iṣe* A, Dh (4).
7. (2) *uve* (5) *unoti* A : (1) *avate* Dh
8. (9) *ubhñās* A : (7) *unap* A : (6) *umbhata* A : *ubhati* (*umbhati*) Dh
9. (6) *recháti* B : (3) *iyarti* A : (5) *ṛṇóti* A : (6) *rante* A : (9) *ṛṇāti* C (2) *árti* A. Cf. Dh i and iii, *ṛṇ*-viii.
10. (7) *ṛñjate* A : (6) *ṛñjāti* A : (4) *rjyate* A : (1) *árjati* A. -Cf. Dh *arj*- (i and x), *rj*- (i).
11. (5) *kṛṇóti* A : (8) *karóti* B : (2) *kdrṣi* A : (1) *karanti* A : Dh. *kṛ*- viii, v.
12. (6) *kṛntāti* B : *kartati* Ce : Dh *kṛt*- vi.
13. (9) *kṣiṇāti* A : (5) *kṣiṇóti* B : (1) *kṣayati* Ce : (4) *kṣīyate* A : (2) *kṣidhi* A : Dh. i only.
14. (2) *kṣéti* A : (6) *kṣiyāti* A : *kṣāyati* A : Dh vi.
15. (4) *kṣubhyati* C : (1) *kṣobhate* Au : (5) *kṣubhnuys* Ajb : (9) *kṣubhnāti* C. Cf. Dh. i, iv, ix.
16. (9) *grathnāti* B : (7) *grṇatti* A : (1) *granthati* (*grathati*) C. Cf. Dh. *grath*-, *granth*- i, ix, x.
17. (3) *jighrati* B : (1) *jīghrati* B : (2) *ghrāti* B : Dh. i.
18. (5) *cinóti* B : (2) *ceti* A : (1) *cayati* A : Dh. v, x.
19. (1) *jānati* A : (4) *jāyate* B : (2) *jāniṣva* A : (3) *jajanti* C. Cf. Dh. *jan*- (i), (iii and iv).
20. (1) *jāratī* A : (6) *jurāti* A : (4) *jīryati* B : *jūryati* A. Cf. Dh. *jr*- i, iv, ix and x.

21. (2) *tāṣṭi* A : (5) *taṣṣuṁvānti* A : (1) *takṣati* B : Dh. i.
22. *tuñjāte* A : (1) *tūñjamāna* A : (6) *tujānt* A : (1) *tojati* C : Dh. i, x.
23. (1) *tāratī* B : (6) *tirāti* A : *turāti* A : (3) *titarti* AC, *tutorti* C : (8) *tarute* A : (2?) *turyāma* A : (4) *tīryati* ? A : Dh. i.
24. (4) *trpyati* B : (5) *trpṇōti* A, *trpnoti* C : (6) *trmpāti* A : (1) *tarṇanti* Ce; Cf. Dh. iv, v, vi, x; *trmp-* vi.
25. (5) *dāhati* B : (4) *dahyati* Ce : (2) *dhāḥkṣi* A : Dh. i.
26. (3) *dādāti* B : (1) *dadati* B : (4) *dāyamāna* A : (2) *dāti* A : Dh. *dā-* i, ii, iii, *dad-* i.
27. (1) *dāśati* A : (2) *dāṣṭi* A : (5) *dāśnōti* A : Dh. *dāś-* i, v, x.
28. (6) *dīśati* B : (3) *dīdeṣṭu* A : (4) *dīśyati* A : Dh. vi.
29. (2) *dōgdhi* B : (6) *duhet* Ce : (4) *duhyati* Ce : Dh. i, ii.
30. (3) *dādadhāti* B : (1) *dādhati* B : (2) *dhāti* A : (4) *dhāyeta* B : Dh. *dhā-* iii, *dadh-* i.
31. (5) *dhṛṣṇōti* B : (1) *dhārṣati* A : (2) *dhṛṣant* A : Dh. *dhṛṣ-* v, x.
32. (2) *nauti* B : (2) *nāvate* A : (6) *nuvati* C : Dh. ii, iv.
33. (1) *pibati* B : (2) *pāti* A : (3) *pīpatu* B : Dh. *pā-* i, ii.
34. (1) *pāyate* A : (2?) *piyāna* A : (3?) *pīpihi* A : (5) *pinvānt* A : Dh. *pinv-* i, *pyai-*, *pyāy-* i.
35. (3) *pīparti* AC : (9) *pṛṇāti* A : (6) *pṛṇati* A : (5) *pṛṇuṣāt* A : (4) *pūryamāna* A : Dh. *pṛ-* iii, ix, x; *pṛṇ-* vi.

36. (3) *bibharti* A : (1) *bhāṛati* B : (2) *bharti* A : Dh. i, iii.
37. (1) *mādati* A : (3) *mamatsi* A : (4) *māḍyati* B : (2) *mātsi* A : Dh. i, iv, x.
38. (9) *mināti* A : (5) *minoti* AC : (3) *minūtas* A : (4) *mīyate* B : Dh. mi-, v, mī- iv, ix.
39. (2) *yanti* A : (6) *yuvāti* A : (9) *yunāti* C : Dh. yu- ii, ix, x.
40. (3) *yuyōti* A. (6) *dyuvanta* A : (1) *yūcchati* A : Dh. yuch- i.
41. (1) *rāmāte* B : (9) *ramṇāti* A : Dh. ram- i.
42. (3) *rirīhi* A : *rārate* A : (2) *rāsi* AC : (1) *rāsate* A : Dh. rā- ii, rās- i.
43. (2) *roditi* B : (6) *rudati* B : (1) *rodati* B : Dh. rud- ii.
44. (4) *lūbhyaṭi* B : (6) *lubhati* C : (1) *lobhase* C : Dh. lubh- iv, vi.
45. (8) *vanōti* A : (1) *vānati* (6) *vanāti* A : Dh. van- i, viii, x.
46. (2) *vāṣṭi* B : (1) *vāśanti* A : (3) *vavāḁṣi* *vivaṣṭi* A : (6) *uśātmāna* A : Dh. vāś- ii.
47. (2) *vētti* B : (1) *vedate* A : (6) *vidditi* B : Dh. vid- ii, vii, x.
48. (1) *śdmant* A : (2) *śamīṣva* A : (9) *śamnīṣe* A : *śamyati*, *śimiyati* A : in the sense of 'labour', not found in Dh.
49. (1) *sāhate* B : (4) *sahyāmi* A : (2) *sakṣi* A : Dh. sah- i, iv, x.

50. (2) *hānti* B: (1) *hanāmi* B: (6?) *aghnām* C: (8) *hanomi* A: (1) *jighnate* A: Dh. *han-* ii.

These fifty examples of the stem forms of the IA bases will bring out the following points in the evolution of the verbal bases and their stems:

- (1) Leaving aside the tenth or *cur*-class as given by the Dhātupāṭhas we notice the gradual reduction of the number of possible stem forms. Where the earlier stage shows us—without taking into account the secondary stem-forms such as passive or causative—two or more than two types the later period has either one or two types only.
- (2) In the majority of cases the reduction affects the athematic stems. When not reduced, the original athematic stems remain in order of their preference or usage in actually recorded forms. The frequency of the different athematic forms tells upon their retention or reduction.
- (3) Where the earlier period recognizes one base with several stem forms, the later period as recorded in the Dhātupāṭhas recognizes fresh bases, as for example: *i-ay-* both recorded in the Dh.; *ṛ-ṛṇ-*; *ṣṛ-ṣṛṇ-*, etc. In other words the new bases thus formed are nothing but stem-forms of earlier bases classified in the new system under a different category. Thus *ay-* the new form of the base *i-* when it assumes the stem-form of class $-\alpha$ unaccented, is considered to be a root belonging to this class while *i-* remains in the root-class or *ad*-class. Similarly the root *ṛ-* of classes i and iii assumes the stem form *ṛṇó-* in class v of the earlier period, but is now recorded in the Dh. as the base *ṛṇ-* belonging to class viii. I am adding a com-

- : plete index of this formation in OIA found in the Dhātupāṭhas so as to facilitate reference to the new analogical bases formed in the later period of OIA.²¹
- (4) The gradual reduction of athematic stems to thematic stems is characterised by changes such as *grah-* ix: *ghīṇ-*, *ghuṇ-* i.

In my account of the verbal bases of OIA²² I have utilized the material collected by the researches of Prof. LIEBICH into the history of the Indian Grammatical systems, and especially his edition of the *Ksīrataraṅgiṇī*. Thus the number of verbal bases will exceed those given in any single edition of the different Dhātupāṭhas. The question arises if all these root-lists are based on observed fact or merely inventions of the grammarians themselves. In the first place we have a rough idea of the period in which the different Dhātupāṭhas came into existence, and are thus in a position to judge whether the newer bases recorded are merely inventions or due to actual research by these authors into the literature available to them. In this connection it will serve a useful purpose if we recount here a summary of A. Hjalmar EDGREN's thesis on the Verbal Roots of the Sanskrit Language.²³

EDGREN divides the verbal roots into two groups; authenticated and unauthenticated. The authenticated roots are those actually found in any personal or impersonal forms in the existing literature so far as it is known, whether recorded or not by the grammarians in their roots-lists. In fact he enumerates the following as not occurring in Pāṇini's Dhātupāṭha (WESTERGAARD'S *Radices ling. Sansk.*) but found especially in the Ṛgveda :—

aṅkh-, arś-, ār-, ūṅkh- (*uṅkh-given*), kaṭṭ-, kāk (*cf. kam-*), krakṣ-, kṣup-, khud-, gadh-, gulph-, guṣp-, gūrdh-, jaṇb-, jajjh-, dam-, tand-, ¹tuś-, truṭ-, truḍ-, dan-, dudh-, dhanv-,

niḍ-, paj-, palpū-, pibḍ-, bhan-, bhiṣaj-, bhur-, bhuraj-, majj-, (Dh. masj-), maṇ-, migh-, (cf. Ch. mih-), myakṣ-, yād-, rapṣ-, rip-, red-, lam-, vat-, vīḍ-, vrad-, vrādh-, vla(n)g-, śat-, śuj-, śuṣ-, bru-.

Of these authentic radicals he leaves out what he considers as duplicates such as *dā-*, *dad-*, *dāy-*, or *vip-*: *vep-*, or nasalised roots *badh-*: *bandh-* or forms like *khid-*: *skhid-*, and finds 880 radicals which are authenticated on the principles defined by him. Of these 880 he finds 48 which are of secondary formation, probably denominatives, like *amś-*, *gaṇḍ-*, *phull-*, etc. Then there are 16 derivative verb forms such as *kṣap-*: caus. of *kṣi-*, *jāgar-*: intensive of **gr-*, etc. Subtracting these he gets 818 radical forms. In these 818 bases there are variant-radicals of the type *laigh-*: *raigh-* numbering 27. Following a rather precarious method of analysis which was unavoidable at that time, before the comparative grammar of IE had progressed sufficiently under the aegis of the Junggrammatischer, he classifies *ci-*, *cit-* and *cint-* in the same class as *si-*, *siv-*, *gar-* and *garj-*. Variant forms of bases such as *pā-* and *pī-*, *par-* (*pr-*) and *prā-* with verbal enlargements, together give him about 156 root-derivatives, yielding in effect only 633 bases. A further reduction of this figure is obtained by comparison of semantically related forms reducing them to a common original base, as in *kamp-* 'tremble': *kup-* 'be stirred or excited' ('to which two forms an original *kap* is wanting' EDGREN). That this method is unscientific is proved by the fact that Sk. *kamp* goes back to IE **qamp-* while Sk. *kup-* < IE **qeup-*. But by these means he reduces the authentic bases of OIA to 587.

Leaving aside the 48 denominatives from the 880 authentic bases, we have 832 bases of which 528 occur in the R̥gveda and the other literature; of the remaining 304 bases, 62 occur in the R̥gveda alone, 4 in the Atharvan alone; the balance of 242 bases

which do not occur in RV, shows however a list of 31 roots which have derivative words in the RV. A large number of these are found in the other Vedic literature. We must remember at all times that the absence of any form in the RV or any other work is not a certain or even presumptive evidence of its non-existence in the language of that period, for the literature available is small in comparison with the extent of the vocables as discussed so majestically by Patañjali in the *Mahābhāṣya* when discussing the provenance of words.³⁴

An examination of these 242 bases shows that they are later formations; 63 contain the *l*-sound (25 initial, 25 final and 15 medial) which is generally considered later than *r*-sound.³⁵ The proportion of these two, for instance, in the R̥gveda is one in fifty-four, but increases to 10/14 in post-Vedic literature. Similarly the cerebrals occur in 12 radicals in the RV in opposition to 48 in later forms; the proportion here is 1:49 Vedic :: 1:9 in post-Vedic. Similarly with regard to the palatals, it is important to notice that the ratio is 1:6 in Vedic; 1:9 in post-Vedic. The authenticity of these forms has another aspect, namely the productiveness of these bases. Actually only 18 roots 'appear isolated and barren' in the dictionaries: *krūḍ-*, *gard-*, ²*jar-*, (*jṛ*), *tuṣ-*, *tvāṅ-*, *dan-*, *nal-*, *bhuraj-*, *bhrī-*, *ruṭh-*, *vruḍ-*, ¹*śad-*, *ścam-*, *śūr-*, *śuj-*, *stigh-*, *vith-* and *hās-*. Most of these occur, however, as *hapax legomena*.

The unauthenticated bases, according to EDGREN, amount to a little above 1100, and have not been found in personal or impersonal forms in the literature. That his 880 bases have been increased to 1136 by WHITNEY in the course of 8 years (EDGREN's paper 1878: WHITNEY's *Roots* 1885) of further research by employing the Petersburg Lexicon shows how much of the arguments of EDGREN have to be given up in the light of the new material. But his main points have to be satisfied in all their conditions:

1. Actual recorded usages of the bases in personal or impersonal forms, that is finite or non-finite forms.
2. If they are not artificial creations they should have some productive activities in the recorded literature, the proportion varying with the nature and value of the base considered. Thus genuine nominal forms related to them beyond doubt are necessary to establish their authenticity.

From these two considerations EDGREN finds only about 150 radicals having any possible connection in sense with surrounding or similar nominal forms.

His argument on the artificiality of these bases rests upon the fact that there is no limit to their creation on a definite scale, and that fourfifths of these unauthentic bases can be grouped in such parallel forms, containing each from two or three up to twenty or even more bases. Two principles seem to have governed their creation: (1) the desire to set up root-forms to explain certain classes of words and (2) modelling these radicals on true bases not only in form but also in sense, as in *sev-*: *kev-*, *khev-*, *gev-*, *glev-*, *pev-*.

Now whether these authenticated bases are pure figments of the Indian grammarians or a certain proportion of them may be real, stored away in some unexplored part of literature or for some reason never recorded there, we can take them for what they are worth, namely recorded vocables in collections of known periods, finding at times cognate elements within the Middle and Modern IA field. Even EDGREN admits the prime importance of collateral evidence of cognate languages, but this should not alone decide the genuineness of the formation. If the test of productivity is applicable to the cognate bases of MIA or NIA then there is definite ground to accept the genuineness of these bases. Apart from that the compara-

tive development of these bases in OIA and MIA will help us in paving a footpath into the unexplored region of historical linguistics within the IA domain.

In his judgment on the value of these so-called unauthenticated verbal bases EDCREN has not taken into account the linguistic forces which are at work in language in general. Even the so-called authentic bases are not free from the criticism which he levels against the other group. The building of forms on analogy has a particularly prolific field in the rining element of vocables, and that this is not confined to any one member of the IE group may be seen from GUENTERT's capital work on the Rime-word building in Aryan and Old Greek.²¹ I shall quote below the verbal bases treated by him which follow this principle of rime-word building, one of the most potent forces in linguistic creations.

1. *gras-* : *bhas-* : *ghas-* : *vas-* 'to eat'
2. *mud-*, *mad-* 'be merry'- *rud-* 'weep'. *mādati* : *mōdati* : *rōdati*, *mada-* : *moda-* : *roda-*.
3. *inōti* : *jinōti* : *hinōti* 'send, quicken, impel' *invati* : *jinvati* : *hinvati*.
4. *carv-* : *bharv-* 'devour' : *bhārvati* *carvati*.
5. *nud-* : *tud-* : *kṣud-* 'push, thrust'.
6. *kṣud-* : *ud-* 'wet'.
7. *rabh-* : *grabh-* 'take hold'
8. *skabh-* : *stabh-* 'prop'.
9. *mand-* : *nand-* 'be merry'.
10. *dā-* : *sā-* 'bind'; the Iran. present *haya* indicates that OIA *syāti* is built up after *-dyati*.
11. *chid-* : *bhid-* 'cut off'.

12. *gádati : vádati* 'speaks'.
13. *kr- : str-* 'spread, scatter'.
14. *bhyas- : tras-* 'fear, tremble'.
15. *stu- : nu-* 'praise', *hu- : ru-* 'call, invite'.
16. *kās- : bhās-* 'shine'.
17. *das- : hras-* 'waste'.
18. *vā- : sā-* 'win'.
19. *aś- 'eat' : daś- 'bite'*.
20. *styā- : śyā-, tak-, tvak-* 'rush'.
21. *pinv- : dhinv-* 'fatten'.
22. *pyā- : śvā-* 'swell'.
23. *kṣāpati : tāpati* 'be abstinent'.
24. *sphur- : bhur-* 'quiver'.
25. *vellati : khēlati* 'stagger'.
26. *mṛś- : spṛś-* 'touch, feel'.
27. *phālati : dālati* 'bursts'.
28. *har- : bhay-* 'bear'.
29. *trā- : pā-* 'protect'.
30. *dr̥mhati : bṛmhati* 'make firm'.
31. *sru- : pru- : plu-* 'flow'.
32. *mṛyāti 'crushes' : śṛyāti 'crushes' ; mārdati, mardayati : drdati, ardāyati 'rubs, crushes' ; mrd- : tṛd- 'crush' ; mṛṣṭā-, ghrṣṭā-*.
33. *par- : tar-* 'cross'.
34. *tam- : śram-* 'be weary'.
35. *śubh- : śudh- ; suc- : ruc-*.

These examples may be doubled from the collection given by GUENTERT. It is sufficient here to see that the so-called authenticated bases of OIA, having cognates among other members of the IE family, show a remarkable tendency of having riming counterparts of themselves in the same or similar meanings. It is therefore no wonder that among the non-authenticated bases we should discover a greater tendency at riming. The most prolific groupings of this category are seen in (a) verbs of movement—about 336 according to EDGREN; (h) verbs meaning 'hurt, kill'—about 110 which may be divided into 18 or 19 groups of riming elements; and (c) verbs meaning 'sound' about 70. Thus nearly over half of these new formations are based on riming extensions.

While this principle of rime-word building may be said to be active in this section of the OIA bases, what is the significance of such formation to the history of IA? Our duty is not to attempt a classification of OIA verbal bases so much as to discover the development of IA in all its major stages. Let us take the rime-words corresponding to OIA *sev-* 'serve': *kev-*, *gev-*, *glev-*, *pev-*, *mev-*, *mlev-*, *šev-*. Herein we find two sets *gev-*: *glev-*, *mev-*: *mlev-* which need some explanation. While the set *gev-*: *glev-* is recorded in Pāṇini's Dhātupāṭha, *mlev-* alone is found in it as opposed to *mev-* of Candra's Dhātupāṭha. The relative distance in time between these two will throw some light on this phenomenon: on the analogy of *gev-*: *glev-* :: *mlev-*:? Candra gives us the new formation *mev-*. But why should new formations at all occur in these circumstances? The most normal explanation here is that the *mlev-* of Pāṇini's Dhātupāṭha, whether artificial or not, has given rise in later records or later speech to a doublet *mev-* with reduction of the consonant cluster at the beginning of the word. Already in the Pāli Dhātupāṭhas which are later than both mentioned above, these doublet-forms *mev-*: *mlev-* have given rise to the bases

mev-; *milev-*,²⁷ but just as the initial cluster may be reduced to a single consonant they may be separated by *svara-hhakti*, and thus it may be argued with equal force that *mev-* and *milev-* of Pāli may be directly from an earlier *milev-*. If this be so it is so much the better for our argument that Candra's *mev-* is the MIA form of *milev-* reintroduced into OIA in its new formation. The earlier doublet *gev-:glev-* is also a similar dialectical form, *glev-* being the earlier and *gev-* its MIA counterpart forming already a section of the OIA vocabulary.

It is thus necessary to see what part of these bases may be considered as hypersanskritisation of MIA forms and merely loans from the MIA vocabulary. I am giving below a few examples of OIA bases which may, within the IA period, be considered as transformed bases of earlier forms, subject to a process of MIA development. Going beyond the IA period some of these bases may however be connected with distinct IE bases, as will be seen from the very first example quoted below.

1. OIA. *atati*, attested in the epics, is generally connected with *ātati* 'wanders', and represented as a modern form. But compare it with OIA *ṛt-* (regarded as doubtful by WHITNEY) 'pursue' and *īṭ-* 'wander'. The three forms *at-*, *at-* and *īṭ-* may be derived from *ṛt-*, which in its turn seems to be a *-t* extension of OIA *r-* 'go'.
2. *ujjh-* 'forsake' apparently belongs to *ud-hā-* < *uj-jaha-*: *ujjha-* through MIA influence.
3. *katth-* 'boast' and according to WHITNEY a secondary prakritised root, but of unclear derivation. According to WALDE-POKORNY *kath* and *katth-* belong to the IE group **qēt* (?), **qōt*, **qat-*, showing the probable relationship between these.

4. *kuttāyati* 'divides, crushes' < *krntāti*, *kartati*. With its parallel form *cṛt-* we obtain forms like *cut-*, *cutt-*, *cat-*, *cunḍ-* and *cunt-* meaning 'clipping, shortening, cutting'.⁹⁵

This brings us to the question of the treatment of *r* in verbal bases related to one another in this manner. The normal treatment of *r* is threefold: *a*, *i* and *u*, or the side-forms *ra*, *ri* and *ru*.⁹⁶ Let us consider cases of this treatment within the verbal fold:

5. In the sense of 'humming' we have following bases: *gajati*: *gañjati*: : *grj-* *gñj-*. Cf. also *guñjati*.⁹⁷
- ✓ 6. In the sense of 'lament' we have the three variants *kāp-*, *krp-*, *krap-*. There is no doubt that the variant *kāp-* (Dhp. 808c)⁹⁸ is nothing more than a MIA reduction of *krp-*.
7. For the root *grh-* in the sense of 'seize' we have the following OIA bases recorded in the Dhātupāṭhas: *ghinṇ-*,⁹⁹ *ghuṇṇ-*, *ghṛṇṇ-*. Now this *ghṛṇṇ-* corresponding to Epic *grhṇati* or Upaniṣadic *grhṇate* is primarily a MIA base with shift of the aspirate. Thus *grhṇate* > *ghṛṇṇate* which further reduces itself to the regular MIA *ghinṇate*, *ghuṇṇate*, with *r* *i* and *u*.
8. *bhaṭ-* 'hire' is nothing less than the MIA form for *bhr-t-*. The other forms have already been discussed in examples 1 and 4 above. We shall not consider examples where changes of this type may be ascertained from the nature of the cognate forms.
9. *kūḍ-* in *kūḍayati* 'burns' < *krūḍayati* 'thickens'.
10. *kṣvedati* 'hum' found in the epics < *kṣvedati*, found in the Brāhmanas. The very fact of their belonging

to two different periods show that the cerebralisation is a later phenomenon.²²

11. *gunṭhayati* 'covers up': *grathnāti*, *granthati* < **grn-thāti* 'ties up.' TURNER does not pose this latter form to explain the cerebralisation in his *Nepali Dictionary*.
12. *galati* 'drops' < **galati*, **garati* < *gr-* in *girāti*, *gilāti* 'swallows'.
13. *chodayati* 'wrenches', *chotita-* 'wrenched', *chuṭ-*, *chuḍ-*: **chṛt-*, *chṛd-* in *chṛṇatti* 'spues, ejects', *chardati*, **chṛdāti*, **chṛtāti*.
14. *tatāti* 'clatters' < **tr-t-ati* < *tr-* 'pass', with -t enlargement. For a parallel development see below.
15. **taḍati*, *tāḍhi* 'beats': *trṇāti*, *tardati*, **trḍati* 'splits, bores'.
16. *ḍiyate*, *ḍayate* 'flies' found only in classical Sanskrit: *ḍiyati* in the Rgveda. The cerebralisation is paralleled by such forms as MIA *ḍasa-*, *ḍainsa-* < OIA *daś-*, *daṁś-*. For a possible explanation see J. BLOCH in BSOS 5.4
17. *natāti* 'dances' found in classical Sk. < **nṛtāti*, *nṛtyati*.
18. *putati* 'scales' in classical Sk. ? OIA **pṛ-t-* (found in *pṛt*, *pṛtanā* 'fights'. 'Scaling' and 'fighting' are allied ideas and we have the Dhp. meaning 'saṁśleṣane'.
19. *bolayati* 'submerges': *vruḍati* 'sinks', both considered artificial by WHITNEY. TURNER considers **boḍa-yati* as the prototype of *bolayati*, giving on the one hand Pk. *buddai* < **budṛyati* and *bolayati* in Sk.

lexicon on the other hand, cf. under *burnu* in *Nep. Dic.* (453 a 16ff).

OIA *vrudati* is certainly an older form than *bud-* reconstructed by TURNER.

20. *bhaṇati* 'speaks' found in JB and C only < *bhānati* of the Rgveda. The cerebralisation is later.
21. *maṇḍati* 'decks', *māṇḍati* 'is exbilerated': **mṛnd-*, cf. *mṛd-* 'be gracious' and *mṛd-* 'rubs'.
22. *śiṅghati* 'snuffs, sneezes' < **śṛiṅghati*, cf. *śṛiṅghāṇikā* mucus in the nose.
23. *śuj-* 'swell' in RV *śuśujāna-*: OIA *śūyate*. < MIA **suja-* which by hypersanskritisation gives us OIA **śujya-* < *śuj-*.⁹⁸
24. *geṣate*: *gleṣate* 'to seek, search'; cf. *gaveṣ-*.
25. *śaṭhati*, °*te*: *śvaṭhayati*, °*te*: *śaṭhayati*, °*te* 'to act meanly'.
26. *śalate*: *śvalati* 'hasten, hurry'.
27. *kaṇḍati*: *kraṇḍati*: *klaṇḍati* 'cries'.
28. *meṭati*: *mleṭati*: *mreḍati* 'makes happy' < OIA *mreṭ-*?
29. *geṇate*: *gleṇate* 'trembles'.
30. *ghṛṇisati*: *ghuṇisate*: *ghṛṣati* 'rubs, polishes'.
31. *peṣati* 'moves, goes': *preṣate*: *iṣyati*. Observe that *tb -s-* after *e* in the first is a distinctive MIA usage, and the second root is *pra-* and *iṣate*, recognised as one root.
32. *śaṇcate*: *śvaṇcate* 'moves'.
33. *taṅgati*: *traṅgati*: *tvaṅgati* 'moves'.

34. *laṅgati* : 'moves, goes' : : RV. *vlag-*, *vlaṅg-* 'pursue' in the forms *vlagya* and *-vlaṅga*.
35. *jabhate* : *jṛmbhate* 'yawns', through *jṛbh-* : *jabh-*.
36. *śaṇati* : *śraṇati* 'offers'.
37. *mīlati* : *smīlati* : *smīlati* 'wicks' : *kṣmīlati*. Although the form *kṣmīl-* is given by Candrakīrti, it would appear to be the original form from which the other three are derived, for we have from *kṣmīl-* either *śmīl* or *smīl-* as the next stage, finally leading to *mīl-*.
38. *ghuṇ-* : *ghūrṇ-* 'wander, feel giddy, move round and round' etc.
39. *ṭalati* : *ṭvalati* 'is disturbed'.
40. *śākhati* : *ślākhati* 'pervades'.
41. *kaṇati* : *kvaṇati* 'sounds'.
42. *bhaṇati* : *bhraṇati* 'sounds'.

In the above examples we notice many of the MIA tendencies at work such as the simplification of *ṛ* with or without accompanying cerebralization, reduction of consonant clusters, and hypersanskritisation such as is found in no. 23 above. I shall now consider some cases where we find the survival of an ablaut form, not found elsewhere.

43. Sk. *paṭhati* has been considered as derived from *prath-*, with cerebralization of the dental as effected by the preceding *ṛ*. TURNER, in his review of BLOCH'S *L' indo-aryen* is inclined to connect it rather with an assumed **prthāti* with the vocalization proper to this formation.⁶⁴ Actually we have a root *prth-* in the Dhātupāṭhas meaning *vikṣepa-* 'throwing out', pronouncing, reciting, *parthate*, *parthati*, **prthāti*.

There are other instances of OIA roots quoted in the Dhātupāṭhas which show this relationship to each other. I give below a few of these examples.

44. *kr̥ḍ-* (*ghanatve*) vi: *kruḍ* (*nimajjane*) vi; here the sense of *nimajjana* naturally follows the concept of *ghanatva*.
45. *kr̥ḥ-* i, x: *kraḥ-* x.
46. *gr̥h-* i, x: *grah-* ix 'seize'.
47. *dh̥r̥j-*, *dh̥r̥ñj-* i: *dhraj-*, *dhrañj-* 'sound'.
48. *mr̥d-* ix: *mrād-* x. 'crush'.
49. *mr̥kṣ-* i: *mrakṣ-* x.
50. *sr-* i: *sru-*?

Quite a number of verbal bases having identical senses differ from one another in modifications of the intervocal consonant in thematic stems: *ant-*: *and-* 'hind'; *ak-*: *ag-* 'go'; *aṅka-*: *anga-* 'mark'; *cat-*: *cad-* 'ask'; *cut-*: *cud-* 'cut off'; *cun̥t-*: *cun̥ḍ-* 'cut off, shorten'; *jarc(h)-*: *jarj(h)-* 'speak'; *tik-*: *tig-* 'to go'; *tut-*: *tuḍ-* 'break'; *tuph-*: *tubh-* 'hurt'; *tump-*: *tumb-* 'hurt'; *drākh-*: *drāgh-* 'he able'; *nāth-*: *nādh-* 'seek aid'; *raṅkh-*: *raṅgh-* 'move'; *laṭ-*: *laḍ-* 'play'; *lākh-*: *lāgh-* 'he able'; *vaṅk-*: *vaṅg-* 'bend, become crooked'; *vaṇt-*: *vaṇḍ-* 'divide, share'; *vic-*: *vij-* 'separate'; *śraṅk-*: *śraṅg-* 'move'; *ślāṅk-*: *ślāṅg-* 'move'; *ślākh-*: *ślāgh-* 'pervade, praise'; *sphuṭ-*: *sphuḍ-*⁸⁸ 'break out or open, appear'. This change of the single intervocalic consonant into its voiced type is characteristic of MIA in general. The voicing of consonants after the nasal is characteristic of the North-Western dialects to-day, and historically such forms have probably arisen within the same area. But it is interesting to note that a fairly large number of even what may be

called jingle formations or rime-words based on some authenticated radical show within themselves these MIA tendencies. This fact should be a warning to us against jumping to conclusions about the nature of such roots merely because they happen to form a string of similar bases running to pattern.

Before concluding with the types of OIA bases I should like to point out here one peculiarity of certain bases which have the cluster *-rb* or *-rv* characterising them. The *b* type signifies invariably 'movement' in opposition to the *v-* type which signifies 'hurt' or 'injure' in its main sense. Or according to be definition of the Dhātupāṭhas themselves, the *b-* class give us the sense of *gati* while the *v-* class that of *himsā* or *darpa* :

arb- : *arv-*; **urb-* : *urv-*; *karb-* : *karv-*; *kharb-* : *kharv-*;
garb- : *garv-*; *carb-* : *carv-*; **turb-* : *turv-*; **durb-* : *durv-*;
 **dhurb-* : *dhurv-*; *parb-* : *parv-*; *barb-* : **barv-*; **bharb-* :
bharv-; *marb-* : *marv-*; **murb-* : *murv-*; *larb-* : **larv-*; *śarb-* :
śarv-; *sarb-* : *sarv-*.

This parallelism seems to indicate the force of the rime-word-building activities in IA to a greater extent than the mere pattern-formations. EDGREN has already noted a number of examples which go to form simultaneously both the 'go' and 'kill' groups.

In the comparative table of IA verbal bases I propose to indicate also the sources of the different Dhātupāṭhas. If EDGREN's contention is accepted that these indigenous lists became gradually hurdened with a heap of inorganic rubbish, in some parts hiding and well nigh extinguishing its real life,³⁹ and that most of them are spurious, it is also necessary to see them in their historical evolution. Were these grammarians merely armchair philosophers weaving out of their imagination phantastic forms and burdening their production with such inorganic rubbish, or is

there some modifying characteristic which gives them at least some status demanding respect? If we go through the root list we shall find that each new system has not only repeated what is genuine in the earlier systems, but has added materially to our knowledge of AIA verbal bases through incessant researches carried on by generations of scholars at a time when the modern indexing system was probably unknown. For fear of expanding this lecture beyond the time I have at my disposal I am giving below in a footnote a number of genuine bases, belonging only to the older period, noticed in the Dhātupāṭhas subsequent to that belonging to the school of Pāṇini.⁷⁷ If their non-inclusion in Pāṇini's Dhātupāṭhas and inclusion in later lists is not a measure of the linguistic research carried on by the indigenous grammatical schools, I do not know how they could have added materially to the list of these authenticated or genuine AIA bases recorded in Vedic and early Sūtra literature. Even to-day, for instance, it is a matter of surprise that Pāṇini has rightly seen the presence of a sibilant in the roots *masj* and *bhrasj-*, 'though not a single form of these roots occurs in Sanskrit with a sibilant'.⁷⁸ The presence of this sibilant can be justified only on the basis of comparative philology, and it is only by process of divination that Pāṇini has given them with the sibilant. On the other hand the forms *sasj-* and *lasj* for *sajj-* and *lajj-* are analogical,⁷⁹ without any historical foundation. Thus while there is a possibility of their adding inorganic rubbish to the lexical material before them, they are not amateurs dealing with this science. So one of the most important aspects of any future study of Indian linguistics must necessarily take into account the vast material presented to us in this indigenous literature.

LECTURE III

THE VERBAL BASES OF INDO-ARYAN

PART II

IN the last lecture I referred to some Middle Indo-Aryan bases as derived from the Indo-European stage itself, citing GRAY's paper on Fifteen Prākṛit-Indo-European Etymologies (JAOS 60. 361-369) as an example. I may as well quote here the first paragraph of his excellent paper: 'That many Prākṛit words, often represented in Modern Indian languages and even borrowed in the Sanskrit vocabulary or recorded as bases in the Dhātupāṭha, either have only remote cognates in Sanskrit or have none whatever so far as now known, is too obvious to require discussion. A good number of such Prākṛit words, however, are found on examination, to be derived from bases long recognized in non-Indian linguistic families of Indo-European. It becomes evident, then, that a study of the vocabulary of the various Prākṛit dialects (including Pāli) from this point of view would be of service to Indianists and Indo-Europeanists alike.' His paper is presented with a view to 'illustrate the possibilities of a field hitherto inadequately explored'.

The fact that such survivals of IE vocables are found in MIA indicates firstly the non-literary or vernacular character of MIA before it became stylized and dead; secondly it illustrates quite well the universally recognized principle that uncultivated dialects preserve original characteristics to a greater extent than the literary forms. I have already discussed the two-fold possibility of such vocables while dealing with the IE verbal bases found only in the later period of OIA, not being recorded in the earlier literature. While the field suggested by GRAY has not been adequately explored, there are certain pitfalls for the unwary in this direction for, what may at times be a purely Indian development may in this manner be regarded

as a direct survival of Indo-European in MIA. One such example is Pāli *visati* which BLOCH considers as representing IE **wī-* (Latin *vīginti* etc.). In his review of *L'indo-aryen* TURNER rightly questions this as follows:¹ 'But is it necessary to go beyond Sanskrit *viśati-*? For *-iśh* already in Pāli *>ih* (*sīha-* <*siṃhā-*) as later *aiśh* in Prakrit *>āh*, *iśs-* >Pkt. *īs* (*pīs* 'grind' <*piśs-*) although remaining in Pāli. But sound changes appear earlier in numerals than in other words: witness Aśokan *traidasa* <*trāyodaśa* and *cāvudasa* with early loss of *-t-*. Thus the change *iśs* > *īs* is in accordance with the system and appears in the first favourable circumstances.' Thus Pāli *visati* is capable of being considered as either a survival of IE **wī-* not recorded in OIA, or quite a normal development, if somewhat early, of Sanskrit *viśati*. Up to now there are no tests by means of which these two types could be separated when both apply to the cases considered at the same time.

I shall not endeavour here to trace such IE element particularly in the MIA field, for even if the number of verbal bases so related be fairly large, they would only illustrate the vernacular element of MIA retained through the vernaculars of OIA without adding much to our knowledge of the history of IA. Only on one point would their origin be helpful to us, and that in connection with the IE bases in late OIA. The full details of this problem will be dealt with by me in my work on the Verbal Bases of Middle Indo-Aryan.

Many of the examples cited by Indo-Europeanists of the survival of IE bases in MIA show initially not the primitive base itself, but only some extended form of it: thus *att-* in the word *attana-* 'exercise' <*per-te-no-* (the primitive base being **per-* >OIA *r-*); *kaḍḍhai* <**kardh* <**qal-dhe-*, an extension of the base **qale* in *-dh-*; similarly *caḍai* <**qel-de-* as Guj. Mar. *caḍh-* <**qel-dhe-*, extensions of the base **qele-* 'be

high, lift high'.¹ This fact is also true of a large number of OIA bases which are inherited from the IE stage. The morpheme which extends the primitive base may be called a verbal determinative or a FORMANS of extension or enlargement. The determinative are of two kinds, one found purely as a verbal type when it is called a verbal determinative, and the other in the building of nominal types from the verbal bases. I shall briefly indicate here the different types of verbal determinatives found in IE which effect the history of the IA verbal bases.

- | | | |
|-----|----------------------|--|
| 1. | Verbal determinative | -ā-: OIA. <i>psā: bhas-</i> |
| 2. | " | " -ō-: <i>dāvane: duvas-</i> |
| 3. | " | " -u-: <i>dr-āva-ti: drā-</i> |
| 4. | " | " -i-: |
| 5. | " | " -ī-: |
| 6. | " | " -k- |
| 7. | " | " -k ^w - |
| 8. | " | " -g-: <i>srjāti: sisarī</i> |
| 9. | " | " -gh-: <i>drūhyati: dhru-</i> |
| 10. | " | " -t-: <i>cétati: cikēti. dyótate:</i>
<i>dīvyati</i> |
| 11. | " | " -d-: <i>nuddāti: navāte</i> |
| 12. | " | " -dh-: <i>spār-dh-ate: dhana-</i>
<i>spṛ-t</i> |
| 13. | " | " -p-: <i>sthāpayati: sthā-</i> |
| 14. | " | " -bh-: |
| 15. | " | " -b-: |
| 16. | " | " -m-: |
| 17. | " | " -n-: |
| 18. | " | " -r-: |
| 19. | " | " -l-: |
| 20. | " | " -s-: <i>bhāsatī: bhāti</i> |

These FORMANTIA need not necessarily be added singly to the base to enlarge it. A combination of several determinatives often gives rise to the extended IE and consequently IA verbal

bases, such as for instance **trem-s-* (i.e. **tr-em-s-* from the base **ter-*). The vowel *e* may form part of the base or the FORMANS, in which case we may speak of the FORMANTIA *-ek*, *-et-*, *-er* or *-es* etc. as is done by KUIPER in his thesis on the nasal presents.³ The chief difficulty with the subject of formantia is, according to MEILLET,⁴ the absence of precision.

Already in his paper EDGREN speaks of the consonantal suffixes like *n*, *t*, *d*, *c*, *j*, *v* which help the prevailing tendency of IE roots to growth by means of 'suffixes' in the examples *i-*: *in-*, *gar-*: *garj-* etc.⁵ It will thus be interesting to see if there are any traces of IA development of verbal determinatives in the history of Middle Indo-Aryan.

Before turning our attention to MIA verbal bases we may recapitulate here some of the fundamental aspects of the OIA verbal bases, not particularly discussed in the previous lecture. Following RENOUE's classification (*Grammaire Sanscrite, II*, pp. 397 ff.) we have:

- (a) Fictitious roots, instituted partly to explain the origin of certain primary nominal forms: *al-* 'be able' abstracted from *alam*.
- (b) Denominatives turned into simple verbs such as *śaś-vraṇ-*, *lakṣ-*, *mārg-*, *aṅg-*, *lok-*, etc.
- (c) Radicals founded on verbal themes: *dīdī-*, *dīdhī-*, *jakṣ-* as reduplicated bases; with *e* in *jeh-*, *ven-*, *yeṣ-*; enlargement with *-s* in *rās-*, *akṣ-*, *dās-* etc. Notably the group based on desideratives: *hims-*, *bhikṣ-*, *dikṣ-*, *śikṣ-*, *nikṣ-*, etc. In fact there are traces of aorist themes furnishing new bases: *vocati*.

Founded on past passive participles: BSk. *buddhe-yam* Lalv. 51: *buddha-*, *chinnāmi* Div. 417.8; *chinna-* and already in the Kauśika Sūtra *āvacchinnaṭi*).

- (d) Based on creation or modification of radicals by rime-word building.
- (e) Bases arbitrarily separated : *cit-* : *kit-* ; *dr̥n̥h-* : *dṛh-* ; *luḍ-* : *lu-* etc; hases with or without (s) : *tṛ-* : *str-* etc. ; vocalic changes : *mad-*, *mand-* ; *dhyā-* : *dhī-* ; *tēp-* : *tīp-*, etc.
- (f) Arbitrarily united : *chad-* 'cover' and *cha(n)d-* 'please'.
- (g) Bases with preverbs : *vyay-*, *palāy-*, *ujjh-*, etc.
- (h) Enlargements of the type we have just discussed.
- (i) Intrusion of MIA verbal hases : *avalag-*, *hamm-*, *vi-(c)ch-*, and a few others by hypersanskritisation ; *kel-*, *jem-*, *vidhyati-*, *vikurv-* etc.

Already in OIA there is a tendency for the present forms to determine the ensemble of the verbal formation : extension of the morpheme, *pr̥cch-* *pr̥n-* on *pr̥ṇāti*, *bhuikt̥vā-* and *bhūṅk-ṣita-* on *bhuik̥te* after *maṅkt̥vā* : extension of vocalism in *mārṣṭvā* on *mārṣṭi*, *stabdhum* on *stabhnoti* etc.

There is also the question of verbal suppletion : *brav̥īti* : *uvāca* and *āha* : *avocat* ; *paśyati* : *dadarśa* : *adarśat* ; *atti* (*āda* P) : *jaghāsa* ; *hanti* : *jaghāna* : *avadhīt* ; *asti* : *babhūva* : *abhūt*, etc. Thus when the given base does not historically possess any finite forms in certain moods or tenses, its most favourable synonym supplants it in those formations. Verbal suppletion in OIA compares to a certain extent with the system of Dhātvādesās which we find in the Prakrit Grammars.

Another feature which is not generally taken into account by scholars while discussing the verbal hases of IA is the power of the base in composition.

First come the periphrastic formations in the Perfect and Future Tenses :

A. The Perfect of certain bases (such as those beginning with an initial long vowel, *edh* or *ās-*, etc. or faulty bases like *daridrā-*, etc.) is formed on the present base enlarged by an element *ām*, added on ordinarily to *cahāra* (also the earlier mode), *babhūva* (rare even in the epics) and also *āsa* (exceptional in the br. s. and u.)

B. The Periphrastic Future formed by the junction of an agent noun in *-tṛ-* with the present of the base *as-*.

Next comes the *cvi*-formation as a particular type of juxtaposed verbal category. We have thus actually compounded or juxtaposed verbal bases. Let us first consider the general type before going to the *cvi*-forms.

The most important verbal bases which are so compounded or juxtaposed are *bhū-*, sometimes *as-* and *dhā-*, but above all *kr-*. In the earlier stage of the language such juxtaposition is seen with absolutes, with past passive participles: later they are extended to finite forms: *tirobhūyate*, *tiryakkṛtya*, *prādurbabhau*, *dvidhābhūta-*, *alamkṛta-* whence *alamkaroti*; *khātṛkṛtya*, *hīnkaroti*, *vaśatkaroti*; *adhobhū-*, *madbhū-*, *asaukr-*, etc. with pronominal bases. whence *aham-kuryāt*; *aham-kāra-*; *namaskaroti*, *prādhvamkṛtya*, with accusatives; *astam-eti*; nominal forms with final *-a* (instrumental?): *ūrī-kr*, *dviguṇā-kr*, etc.; locatives in *-e*: *haṣṭe-kr*, *nivacane-kr*, etc; and in *-i*: *manasikṛtya*, *hṛdi-krtya*, whence *urasi-grhya*.

The *cvi*- forms: *koṣṭhīkr-*, *lavanīkr-*, *ekāmsīkr-*, *viṣayībhū-*, *phalūkr-*, *aṅgīkr-*, *añjalīkr-*, etc.

Further extensions of this juxtaposition may be seen in such examples as *ātmasātkṛtya*, *āsnīta-pibatiya-*, *mahāpūtrīya-*, *parama-prasādayām āsa* after the tatpuruṣa *parama-prasāda-*. Sometimes, as in the case of the base *gaveṣ-*

founded on apparently primary Vedic forms like *gaviṣ-*, *gave-ṣaṇa-*, *gaviṣṭi-*, and treated so far as form and meaning are concerned as a single word, we have verbal composition going back to a very early period.

There are certain forms not attested in actual literature, but recognized by the grammarians of the addition of certain suffixes to the finite forms : *pacataki* for *pacati*, *chindhaki*, for *chinda* in the imperative, and the attested form *yāmaki*. In such formations we see just the beginning of adding suffixes to morphological forms of bases, becoming more popular in later MIA.⁶

Turning our attention to the Middle Indo-Aryan Verbal Bases, we have naturally to take into account the verbal bases of Pāli, for here, besides a rich literature which in itself offers us a large material for investigation, the activities of the indigenous grammarians, following the methods of Sanskrit grammarians, give us in addition to grammatical compendiums, Pāli root-lists, based on almost similar lines to the Sanskrit Dhātupāthas. In fact the interconnection between the Pāli and Sanskrit grammatical schools has already been dealt with by FRANCKE in his work on the Pāli grammatical systems.¹¹ While the Pāli grammarians have imitated to a large extent the earlier work of the Sanskrit grammarians, and may even be said to have given us a large number of verbal bases which are merely transformations of the corresponding Sanskrit bases, Helmer SMITH's edition of *Saddanīti* shows us what patient research may unravel in the shape of actual citations from Pāli canon. Of the 1,800 and odd Pāli roots which I collected together in my *Roots of the Pāli Dhātupāthas*,⁸ culled only from the three root-lists *Dhātupātha*, *Dhātumañjūsā* and the *Dhātumālā* of *Saddanīti*, less than half are actually attested in literature as tested by the material presented to us in the two dictionaries of CHILDERS and the

Pāli Text Society. Perhaps this number may be increased by means of TRECKNER'S Dictionary which is as yet only in its tenth fascicule, not even completing the first vowel.

In a study of Pāli verbal bases we should naturally omit such types of radicals as *ak-* : *ag-* which have been dealt with in connection with OIA verbal system. Pāli, being one of the most primitive among the MIA languages, does not show us, for instance, as a general rule, the voicing of single intervocalic surds, so that *ak-* : *ag-* is as much a sign of later MIA influence in inflating Pāli vocabulary as that of Sanskrit. On the other hand we may consider certain characteristics of the Sanskrit Dhātupāṭhas which are seen in an incipient manner there.

Let us consider the type (g) discussed above of bases with preverbs : *anu-rudha* *kāme* > *anurujjhati* ; *anuvīdhā* *anukarāṇe* > *anuvī-dhiyyati* ; *antaradhā* > *antaradhāyati*, in opposition to the bases *rudh-*, *dhā-*. Parallel to these we have *āgam-* : *gam-*, the first being defined as *īsamadhiṇāse* and the second as *gatīmhi* ; *ācam-* 'dhovane' : *cam-* 'adane' ; *omā-* 'sāmatthiye' : *mā* 'māne' ; *vilī-* 'vilinabhāve' : *lī* 'silesana-dravīkarāṇesu'. While the fact that preverbs particularize the semantic line of a given base is well known, their inclusion in the root-lists shows the tendency which was at work in the Sanskrit Dhātupāṭhas when roots like *preṣ-* (by the side of MIA loan-word *pes-*) were included in them. So the number of roots is not to be ultimately based on this assumption to their reducible components, but to semantic development of the roots. It is in this manner that the Sk. roots cover a figure which is nearer 2,500 (excluding the purely denominatives treated by SUTTERLIN in IF 1906) than 2,000, just as the Pāli figure mounts up to over 1800.

A number of bases, like their OIA cognates in the Sanskrit Dhātupāṭhas, are really denominative in nature : *ānga-*,

atth-, *gaṇḍ-*, *tiṇ-* 'eat' from *tiṇa-* 'grass' < *trṇa-*; *gandh-* 'smell' etc.

The division of the class-system has not entirely disappeared from the Pāli root-system; in the first or *bhū* class two types are indicated, those with vikarṇas such as *bhava*, *bhavati*, *bhavāma*, and those without: *homi*, *hosi*, *hoti*. The other classes mentioned by the grammarians are *rudh-*: *rundhati*, *rujjhati*; *div-*: *dibbati*; *tud-*: *tudati*; *ji-*: *jināti*; *ju-*: *juhōti*; *ki-*: *kināti*; *su-*: *suṇōti*; *tan-*: *tanōti*; *cur-*: *coreti*; *gah-*: *gaṇhāti*. This division is not quite so artificial as it would appear at first sight, for if we consider the *hu-* class, the past passive participle is *huta-*, so that the base will have to be considered as *hu-* although the present indicative is *juhōti*. Later we shall note that the present indicative determines really the basic or stem form of the radical, unlike as in OIA.

That this division has descended from OIA can be seen from the fact that corresponding to *kṛs-* in class vi: *kṛṣāti* we have Pāli *kaṣati*, aod to i. *kṛsati*: *kassati*. Thus the Pāli base *kaṣ-* given as 'vilekhane' belongs to the sixth conjugation while *kass-* 'kassane' is from the first conjugation.

The thematic conjugation consists of the second, third, fifth, seventh and ninth classes.

Class II: *hanti* is isolated, being generalized into the thematic class I as *hanati*: similarly *veti* < *vid-* generalized into *vidati*; a large number of these bases end in *ā* such as *yā-*, *akkhā-*, *vā-*, *sinā-*, *bhā-*, etc. The roots *i-* aod *si-* also belong to this type, like *as-*.

Class III: *hā-* in *jahāmi* (and also *hāyati*); *dahāsi* (for *dadhāsi*) < *dhā-* (but *dadhati* < *dadh-* in class I): *juhōti* < *hu-* (besides *havati* Sd.); *dadāti* < *dā* (but *dadati* < *dad-* class I).

Class V : Most of these have gone over to class IX: *cinoti* : *cināti*, the latter being everywhere attested in literature similarly *hiṇāti* < *hi-* (OIA. *hinóti*); *dhúnāti* : OIA *dhunóti*; *suṇomi* : *suṇāsi*. The two roots ending in consonants, *āp-* and *śak-* of OIA give the following forms; *sakkoti* : *sakkuṇāti* besides *sakkāmi*, *sakkasi* < *śakyate* or *śakyati*; *pāppoti* : *pāpuṇāti*.

Class VII : This class as a whole becomes a thematic class falling in line with the *muc-* type under class VI. Thus we have *muñcati* : *kantati*, *chindati*, *bhañjati*, *bhindati*, *bhuñjati*, *yūñjati*, *rīñcati*, *rundhati* (besides *rujjhati*), *hiṃsati*, etc. respectively from the bases *kṛt-*, *chid-*, *bhaj-*, *bhid-*, *bhuj-*, *yuj-*, *ric-*, *rudh-* and *hiṃs-* in *hinasti*.

Class VIII : As this class is really nothing more than Class V with enlarged bases with formans *-n*, the forms shown correspond to class IX, as indicated above; thus we get *munāti*, *thunāti*, for **munoti*, **thunoti*; the only exception is *kṛ-* which gives us *karoti*, found in all periods of the language. The earlier forms are *kubbati* < *kurvati* through pl. *kurvanti*; the base *kara-* < OIA *kāratī* is also found in all stages of the language.

Class IX : All bases of the Vth class (and consequently also of VIII); *jānāti*, *gañhāti* and *mināti* < *mā-*; *badh-* goes over to the thematic flexion, giving the base *bandh-* in *bandhati*.

This short analysis demonstrates that while the classification of bases according to the system current in OIA has not completely disappeared the bases themselves have undergone several important changes. Class VIII is really confined to end bases in Pāṇini's Dhātupāṭha of which the first nine end in the formans *-n-*, so that they may equally be considered to belong to class V without the formans; this would explain the merging

of the two classes except for the single base *kṛ-*. Thus of the remaining four classes, there is a merging of classes V and IX into IX, showing the predilection of MIA to *-nā-* < *-no-*. Class VII becomes thematic, and there is a growing tendency for II and III to become thematic. For only a few bases survive this type of conjugation. So already in Pāli, which is the most primitive of the MIA dialects, we see that of the 900 or so of attested bases, the majority of the stems already become thematic, and go over either to the accented or unaccented *-a-* type or classes VI and I.

All the other remarks we have made of the OIA bases hold good for the Pāli counterparts, such as creation of new bases on the principle of rime-word-building, extension by conversion of the stem form into the base, etc.

The next question is with reference to the voice. Here, as in OIA, we have both the middle and the active voices for verbs. But as GEIGER remarks,⁹ the middle voice is in the decline, being chiefly found in the early metrical parts of the canon, partly preserved for metrical reasons and partly as archaisms characteristic of this *gāthā* style. Already in the canonical and post-canonical prose the middle voice is limited to certain forms only such as *-ssu* of the 2nd pers. sing. Imperative or *-ittha* 3rd sing. Preterite; even the passive voice from the earliest period shows active endings. The only real middle ending which lives through all the periods of Pāli and in fact supplants the active endings is that of the present participle *-māṇa*.

After Pāli the most ancient and perhaps the most important of all the MIA dialects are those preserved to us in Aśoka's Inscriptions which may be considered as giving material for the first Linguistic Survey of India. Here we have an advantage which is denied to us in the case of the literary MIA languages

like Pāli or Ardhamāgadhī, Māhārāṣṭrī or Apahhramśa, namely, the exact period and the place to which each of these inscribed edicts belongs. In view of the small extent of the text of these inscriptions we have here what amounts to a random sampling of the dialects which must have been current during that period, and our conclusions will be limited to that extent, but they will be sufficiently valid to show us the tendencies which functioned within each dialect group.

Considering the verbal bases we have the following, classified according to the OIA model, with observations on their nature within the Aśokan Inscriptions:

Class I. Girnar: *krama-*, *gama-*, or *gaccha-*, *passa-*, *ārabha-*, *vata-*, *vasa-* and *tittha-*.

Kalsi: *kama-*, *ga(la)-*, *dakha-*, *vaṣa-* or *vasa-*, *vata-*, *citha-*;

Shahbazgarhi: *krama-*, *garaha-*, *trapa-*, *(dā)kha-*, *ne-*, *bho-* or *ho-*, *ārabha-*, *vasa-*, *vata-*, *vaca-*, *tittha-*.

Dhauḷi and Jaugad: *kampa-*, *krama-*, *gaccha-*, *cala-*, *dakha-* or *dekha-*, *ho-*, *ālabha-*, *(va)sa-*, *vata-*, *svasa-*, (c) i (t) a-.

Pillar: *lagha-*, *°-ikkha-*, *dekha-*, *ho-*, *vada-*, *vaha-*, *vaḍha-*.

Minor Edicts: (a) *laha-*, *gachā-*, *°dhāla-*, *kama-*.

Class II. Girnar: *as-*, *yā-*; *han-* goes over to IX as *upāhanāti*.

Kalsi: *ad-* goes over to I as *ada-*; *as-*, *i-* or *ya-* and *han-* alone remain in this class.

Shah.: *as-*, *han-*.

Dh. Jau.: *as-*, *i-*; *yā-* and *sās-* go over to I.

Pillar: *as-*, *i-*, *yā-*

Minor: *as-*.

Class III. Girnar: *hu-* in *jūha-*.

Kalsi: *joha-*.

Shah.: *°yuha-*.

Dh. Jau. *joha-*.

Pillar: *caha-*.

Class IV. Girnar: *paḥa-*, *manñā-*.

Kalsi: *paḥa-*, *manñā-* or *mana-*.

Shah.: *paḥa-*, *mañā-* or *meñā-*.

Dh. J.: *pa (ja)-*, *manñ (a)-*.

Pillar: *paḥa-*, *ḥusa-*.

Class V. Girnar: Both *āp-* and *śru-* go over to IX, as in Pāli in the forms *prāpuṇati*, *sruṇāru*.

Kalsi: *āp-* to IX as *pāḥpunāta (ti)*: *śru-* to I as *śuna-*.

Shah.: *prapūṇati*, *śruṇa-*.

Dh. J.: *pāḥpunāti*

Pillar: *pāḥpovā*.

Class VI. Girnar: *iccha-*; Kalsi, Shah. Dh. and Jaug. *ich-*.

Pillar: *icha-*, *°khipa-*, *°sija-*.

Minor: *icha-*, *likha-*.

Class VII. Girnar: *bhuḥj-* and *yuj-* go over to I as *bhunija-* and *yuja-*.

Kalsi: *yuja-* to I.

Shah., Dh. and Jaug. *yuja-* to I.

Class VIII. Girnar: *karo-*; *kṣaṇ-* goes over to I as *chana-*.

Kalsi: *kṛ-* to X as *kale-*; *chana-*.

Shah- *karo-* and optionally I *kara-*; *kṣaṇa-*.

Dh. J.: *kṛ-* to X *kale-* or I *kala-*.

Class IX. *ji-* in, *jina-* in Kalsi, Shahbazgarhi, represents OIA *jināti*, but reduced to the base *jina-* may belong to I.

Dh. Jau : *jānā-*.

Shah. : *aś-* goes over to I as *aśa-*.

Pillar : *grah* : goes over to I as *graha-*; *jñā* < *jāna-*.

I am not including the tenth class here as it does not contribute to the discussion about the nature of these bases. The few things we notice about these bases among others are (a) in the root-class *as-* alone remains unaffected; *han-* remains in this class only in Kalsi and Shahbazgarhi inscriptions: elsewhere it has gone over to the thematic class; (b) *hā* and more particularly *hu-* alone represent the reduplicating class; (c) class V has become identified with class IX in their themes, and the vowel *ā* of the IXth class suffix *-nā-* is reduced except in Girnar *upāhanāti*, *sruṇāru*, Kalsi, Dhauli and Jaugad *punāti*, Dhauli and Jaug. *jānā-* where the full grade and reduced forms of the suffix are seen; (d) true bases of Class IX show either the reduced suffix *-na-* or go over to the *-a-* class. (e) in class VIII the form *karo-* is the only surviving type, but it has besides the thematic forms *kale-*, *kara-* or *kala-*; the remaining base shows a transfer to the *-a-* class. Thus the survivals of the pure athematic stems are unique forms of what may be called the auxiliary verb-system *as-* and *kr-*, the rest being gradually assimilated to the thematic type. Even the forms of Class IX, in their stem forms being considered the basic forms, follow the thematic type. Thus what we have seen with respect to Pāli in the matter of reducing the athematic to the thematic system, has become established to a greater extent in the case of Aśokan Inscriptions. Thus already by the third century B. C. the thematisation of athematic OIA bases

has become an established fact, and the only survivors of the older system are those bases which are in constant use as auxiliary verbs such as *as-* and *kṛ-*.

There is still the question of voice to be discussed. In the case of Pāli I have summarised the results of GEIGER'S investigations without actually citing those examples which may be seen by referring to his grammar. Here we may just dwell for a moment on the actual state of affairs, for we have the geographical location of each edict well demarcated, and the dialects represented are synchronic. We have only to take into account the actually attested middle forms.

1. Girnar: In the Indicative we have the following middle forms: *pari(rā)k[a]mate*, *mañate* or *maññate*, *karote* as 3rd sg. 3rd pl.: *karote* < **karointe*; *anuv[o]tare*, *anuvatisare*, *anuvīdhiyare*, *ārabhare*, *ārabhisare*.

In the Optative: 3rd sg. *paṭipajetha*, pl. *susumsera*.

In the Imperative: 3rd sg. *anuvīdhiyatām*, *susrusatā*; 3rd pl. *anuvātaram*.

Participle: Present: *bhujj[a]māna*.

2. Kalsi: There are no definite middle endings for finite forms except in the specialized aorist 3rd sg. *-itthā*; the ending of the present participle—*māna* is seen in the following examples: *vijīnamāna* and *ādamāna*.
3. Shahbazgarhi: All the verbs show active endings except the following present participles: *vi-jīnamāna*, *ka[ra]mīna*, *aśamāna*.
4. Mansehra shares the same characteristics in this and other respects with Shahbazgarhi, the only middle form recorded being *para[kra]mate*.

5. Dhauli and Jaugad: Only two middle forms: finite *mainu [ate]*, and participles: *sa [m] patipaja [m]* and *vi pat [i] pādayamīne*.
6. Pillar Edicts: No middle forms except *anuvekhamāne, pāyamīnā*.
7. Minor Rock Edicts: two middle participles: *pa [ka]-mam [i] na* and *palakamamīna*.
8. Mysore Edict: *paka [m] i...na* and *samāna (<as-)*.

Reviewing the position from this assemblage of facts the first thing that strikes us is the loss of middle endings in finite forms so far the major groups are concerned; Girnar alone of all these shows a fairly large number of middle forms, Mansehra following with a single example and Kalsi in the specialized forms in *-ittā*. We may safely assume, therefore, that the middle voice had almost disappeared in Aśoka's inscriptions except in Girnar: the west of India seems from this random sample to have preserved in part the middle voice when it had already disappeared from the remaining parts of India to which these inscriptions belong.

That the verbal bases, however, follow the OIA system is proved by the manner in which the past passive participles are built. We have thus in Girnar: *mata- < man-* and *mṛ-; kata- < kṛta-* and *prasanna- < prasanna-*. Similarly from *ksip-* we get Girnar *samkhita* going back to OIA *ksipta-*. Practically all the past passive participles seen in Girnar belong to aorist roots, going back directly to OIA forms. The *-ita* type which becomes the living type in MIA is scarcely noticeable in these inscriptions, although we find it in Pāli; in fact in Pāli the participles in *-ita* are both historically derived as well as the ruling force for new formations in the languages as in *phusita-; phuttha-*; their absence in the inscriptions

cannot be interpreted to mean that *aniṭ* and *seṭ* forms did not exist side by side in the dialect represented there; the point to be noticed is that in primary verbal forms both types do not exist side by side with reference to the same form. Of the historically derived *seṭ* forms we have Kalsi *likhita* with cognates in the remaining dialects. Of the secondary bases, namely the causatives, the *-ita* formation is the normal one: Girnar *ānāpita-*; Kalsi *lekhita-*, *likhāpita-*, *khānāpita-*, *hālāpita-*, etc. These forms are seen in all sets of Aśokan inscriptions: Shah. *likhapitu*, *nīpesapita-*, Man. *ropapita-*, Dhauḷi and Jaugada *hālāpita-*, *lopāpita-*, Pillar edicts *kālāpita-*, *sāvāpita-*, *khānāpāpita-*, etc; these last few forms throw a good deal of light on the evolution of MIA verbal bases.

For while Pāli causatives give us the past passive participles in the OIA manner: *kārita-*, *codita-*, *dassita-*, *pesita-*, etc. from *kāreti*, *codeti* *dasseti*, *peseti*, there is nothing to differentiate in cases like *codita-*, *pesita-*, etc. that they are not from the simplicia; we have of course *dāpita-* the *-p-* of which shows us that it is from the causative base. But such instances are not always very large; only in the case of bases with short *a* can they be distinguished as simplicia or causatives on the grade of the vowel. In the forms seen in the inscriptions we notice, however, the preservation of the causative sign whether it is *-aya-* or *-āpaya-* or *-āpāpa-* in such examples as: Mans. *aṇapayit[e]*, *ropapita-*; Dhauḷi and Jaugada *ānāp[ay]ita-*; Pillar edicts *likhāpita-* beside *likhāpāpita-*, Kalsi *lopita-* beside *lopāpita-*. Thus the Aśokan secondary or derived bases correspond to cognate OIA stems. This process will be seen to affect the development of the MIA primary bases, found sporadically in OIA root-lists, the Pāli roots and the Aśokan derived bases. In these stages we are much too near the OIA stage of development as the state of affairs indicates, and while the new formations are yet in the making,

the derivation from actually employed OIA forms for the corresponding terms is largely evident.

Prof. LUEDERS, in his *Bruckstücke Buddhistischer Dramen*, has come to the conclusion on paleographic evidence that these fragments belong to the Kushana period, and should therefore represent the earliest or one of the earliest manuscript works found in India. Considering the verbal bases we have in the dialect of the 'Bösewicht' the forms *kalemi*, *bhoti*, *peṣṣeti*, *bhonti*, *dekkha* and *vutte*. The dialect of Gobam° gives us *icchāmi*, *kaleti*, *gacchamāne*, *palinata°*, *bhujjitāhi*, and *bhujjitaye*. The dialect of the heteara and the Vidūṣaka show *carāmi*, *pekkhāmi*, *ussasati*, *bhaṇāti*, *karotha*, *haññantu*, *bhujjamāno*, *vicchaddayamāno*, *pāṭayamāno*, *vāhayamāno* *aniyuttā*, *avikkhittena*, *bhuttam*, °*siṭṭha*, °*janitā*, *jīṇṇu°*, etc.

Analysed to their bases we notice that *kr-* goes over to class X as *kale-*; *bhuj-* goes over to the thematic type in *bhujjitaye*; the form *bhujjita-* is therefore interesting in showing us the new rôle which living suffixes of MIA play, and in this particular instance, *-ita* of the past passive participle. *sas-* goes over the class I. The present participle ends in *-māna* or the middle suffix as opposed to the active endings of the other forms. The form *karotha* alone is a conservation of the OIA type.

In effect, if LUEDERS' evidence is accepted as to the probable date of these fragments, we have already in the first century of the Christian era those characteristics which we associate with the Prakrit dialects *par excellence*.

In the language of the Kharoṣṭhi Documents from Chinese Turkestan whose date is approximately fixed by a Chinese Document found in the same heap, bearing a date corresponding to A. D. 269 BURROW notices that the middle is not used except occasionally artificially: *rucate* < *rocate* or Pāli *ruocati*, *vamtade* < *vandate*. The passive which is rare, but

seen commonly in *śrūyati* 'it is heard' and *vucati* 'it is said' already shows the active endings. The other forms cited by BURROW are *pariniyamti*, *lihyati*, *niyati* (possibly optative < **neyati*) and *nikhalayati*. Present participles which are rare have a tendency to generalize the middle forms in *-māna*. Leaving *asti*, the only remnant of the athematic conjugation is found in *śakoma* < *śaknomi*; *janati* represents **jānati* or Sk. *jānāti*. A new formation on analogical principles is found in *denati* 'gives' for *deti*, the extended base *dena-* < *de-* corresponding to the IXth class of OIA. Further details are not needed to see how already in the N-W. of India, the MIA tendencies have become fixed by this period.

According to PISCHEL the changes affecting the verbal system of the Prakrit languages are far greater than those which apply to the nominal system. Following the lines of OIA development the character of the radical-classes is completely changed; the middle voice is generally common only in the present participle in all the dialects. Where it is seen, only the 3rd person singular of the Present Indicative is attested. In our discussion we should not cite purely those forms mentioned by the grammarians which are not quotable from the existing literature. We should rather concentrate on the forms which we meet with in literature, as in most other aspects of linguistics. For the forms given by PISCHEL from the grammarians of Prakrit for the middle voice are not to be found in actuality except in the grammarian's minds.

It is not possible for me to discuss in great detail all the ramifications of this interesting development on the present occasion, as much of this material forms part of my monograph on the Verbal Bases of Middle Indo-Aryan.¹⁰ For laying the emphasis on the historical aspect of linguistics I shall only quote here a few examples from PISCHEL and other standard authorities to show the general lines of the investigation and

bring out the necessity of a fresh approach to this problem, which is in fact the main object of these lectures.

The general lines of Middle Indo-Aryan development so far as the verbal bases are concerned, should be clear now. We shall consider the different types below. But first let us take into account a certain number of bases which PISCHEL connects with hypothetical forms of OIA inflection. In section 482 of his *Grammar* he assumes for the vocalic changes of Prakrit *jīa-* (beside *jā-*), *ghisa-*, *jīma-*, *bhisa-*, *uvviva-*, etc. earlier OIA forms of the accented *a-* class or class VI not attested so far in actual literature such as *jīvā-*, *ghasā-*, *jimā-*, *bhāsā-*, (*ud-*) *vipā-*, etc. Two problems arise from this assumption: the assumed forms are dialectical forms of OIA surviving only in MIA and the vocalic changes of MIA are connected with the accent-system of OIA. But the type by itself is so isolated that it will be difficult to find more than a couple of examples to fit into the scheme of vocalic changes dependent on the accent-system reducing itself to the exception being the rule rather than proving the rule. Moreover the type *tuddti* is the most important of the new classes in Sanskrit,¹ resting on the subjunctive and optatives of the aorist, and it would indeed be difficult to assume the existence of such subjunctive and optative of the aorist in the MIA stage unless it were directly inherited from the OIA stage. Now in these examples it is of the utmost importance to know whether such *tudā-* forms of the OIA parent radicals existed actually in quotable examples. While it is possible to explain Pk. *jīa-* on the basis of Sk. *jīvā-* the reduction of *ā* to *i* is difficult of explanation in *ghisa-* and *bhisa-*. This is a matter which needs elaborate investigations if we have to establish the fact that they depend upon such reconstructed OIA forms.

We have seen so far that MIA verbal bases are either formed from the corresponding OIA bases or their stem forms.

But this does not exhaust the possibilities of MIA verbal base formation. Eschewing in our discussion the question of denominatives, we have to consider the genesis of MIA verbal bases in (a) the past passive participle of OIA, (b) in the stem forms of OIA attested in the earlier period but not in the classical and later period, and (c) in reconstructed forms of OIA. The second type is in reality an archaism in MIA in that the last period of OIA differs in this aspect from the earlier period of which MIA appears to be a survival. A few typical examples are given here by way of illustration.

(a) Past passive participle of OIA > base of MIA :—

piṇaddhaī, piṇaddhāvaī < OIA *api- naddha* from *nāhyati*.

saṁ-thaḍaī < *strta-*.

raiaī, raiāvaī < *racita-*.

viddhaī, viddhijjāī < *viddha-* < *vidhyati*.

(b) Survival of OIA thematic forms :—

karāī < **kāraṭi, karanti*

uk-khiṇāī 'digs up, roots out, uproots, destroys' < *ut-kṣiṇāti, kṣiṇoti*.

gamaī 'goes' < *gāmati, gāmanti*

jaṇāī < *jānati*, later *ajāyate*.

(c) Reconstructed forms of OIA :—

kisai 'becomes lean or thin, feeble or emaciated' < **kṛśīti, kṛśīḥ* (v+) > normal *kṛśyati*.

kuhaī 'stinks, becomes putrid' < **kuthati, kuthita-* (c), *kuthyati*.

guvaī 'becomes confused or perplexed' < **gupati* < *gupyati*.

ghasaī 'rubs, brushes, polishes, scrubs, grinds, etc.'

<*ghr̥sati> ghar̥sati (e); cf: Rv. gh̥r̥su, gh̥r̥sui and TA.
°-ghr̥sua.

ug-ghusai 'proclaims, declares publicly' <*ghuṣṭi>
ghóṣati, ghuṣyati.

callai, calai 'moves' <*calyati, calati.

uc- ciḍai 'be shameless or unabashed' <*cṛta-¹²

ṭhāai 'stands' <*sthāyati.

ñāi 'knows' <*jñāti <jānati.

tasai 'becomes thirsty' <*tr̥ṣṭi> tr̥ṣyate.

payai 'goes, steps' <*padāti> pādyate.

ṭisai 'crushes, grinds, pounds' <*ṭiṣṭi> ṭināṣṭi,
ṭinīṣṭi.

ṁmuai 'releases, liberates' <*mucāti (RV. mucanti,
mucasva etc)< muñcāti.

ṁmuai 'is merry or glad' <*mudāti> módate, cf. V.múd,
ribhai 'creaks, crackles, murmurs, sings' <*ribhāti>
rēbhati.

abhi- ruyai 'is agreeable to' <rucāti> rócate.

liai 'smears' <*līpāti; lin.ṭai cf. a-līp-at.

ṁlisai 'clasps, embraces, clings to, enfolds' <*śliṣṭi>
śliṣyati.

luai <*luvāti> lunati, lunoti.

ṁlubhai 'longs for' <*lubhati < lūbhyati.

vihai 'pierces' <*vidhāti> vidhyati: cf. RV. inf. vidhe.

All these examples show, subject to the remarks made by me about PISCHEL'S explanation of bhisa- etc., the survival in MIA of certain OIA forms which ceased to exist in OIA as such, leaving only a few traces in OIA morphology, as witnessed for instance in the last example cited above. It is almost impossible at this stage to say definitely whether *kisai* is derived from *kr̥ṣṭi or Vedic *kr̥ṣṭh* or *vihai* from *vidhati or the infinitive -vidhe. But the one supposes the other and we are

justified in posing these reconstructed forms as the living models of the MIA bases.

I may also quote here just one example of verbal composition which gives rise to a new base; I refer naturally to the radical *mambhīsa-* which corresponds to the OIA sentence *mā bhaisīhi*, and its inflected forms which show it to be a radical.

Verbal extension seems to be fairly common; the following list does not attempt to exhaust either the morphemes of enlargement or the bases capable of such extension. Among the many enlarging suffixes may be mentioned the pleoastic *-ka-* of OIA which, in the case of Ardhamāgadhī *paribhottuyam*¹² affects even the infinitive form; *-ra-*, *-ḍa-*, and their variants *-la-*, *-alla-*, *-illa-*, *-ulla-*.

-ra- extension: *kappa-ra-* < *kappa-* 'to cut'; *caccāra-* 'discuss' < *caccā* 'wraogle'.

-ḍa- extension: *gummaḍa:* *gumma-* 'become perplexed, faint'; *taḍa-* < OIA *tanoti*, *ta-ta*.

A suffix *-ukka-* is seen in *ghuḍ-ukka*, *ghar-ukka-* 'roar.'

The *-alla-*/*-illa-*/*-ulla-* suffixes are seen in the following typical forms: *guñjulla-*, *guñjella-*, *guñjolla-* 'hum'; *ḍhaṇḍ-alla-*, *ḍhaṇḍhulla-*, *ḍhaṇḍhola-*, *ḍhaṇḍholla-* 'roam, wander, seek'; *ñicchalla-*, *ñicchola-* 'cut'; *ṇolla-* 'incite' < *nud-*, *bolla-* < OIA *bru-*; *mūalla-* 'become dumb' < OIA *mūka-*, etc. In this manner the already large number of inherited MIA verbal bases are increased by enlarging elements being added to them. As we are not directly concerned with the problems of New Indian languages, I have no occasion here to bring out the full implication of these enlarged forms. They are of unique importance to understand the growth of NIA verbal bases.

One of the most urgent problems which faces us with respect to MIA verbal bases is that of the dhātuvādesas. Sir George A. GRIERSON's excellent monograph on this subject¹⁸ gives us all the material we need for understanding the urgency of this problem. We have already seen in the case of OIA the correspondence existing between certain verbal bases such as *han-* and *vadh-*, *i-*, and *gam-* in the present and aorist systems. Similarly according to Pāṇini the forms *pība-*, *jighra-*, *dhama-*, *tiṣṭha-* etc. are ādesas for *pā-*, *ghrā-*, *dhmā-*, *sthā-*, etc. respectively. But with the Prakrits we have quite a distinct problem. It is not so much an interchange of bases for the different systems of morphology like the present, perfect or aorist, or even of different stem forms from a given base, but the vocables themselves which offer some pretty problems to the linguist.

GRIERSON has already summarised the main features of these verbal substitutes: thus Pk. *ho-* may be considered as a verbal substitute for *bhāvati*, though it is its inherited MIA form; in fact Hemacandra actually gives it as an ādesa for *bhū-*. The four rules of GRIERSON are as follows:—

1. Roots identical with OIA roots cannot be considered as substitute verbal bases. Thus *calaī* and *calati* being identical in form cannot be deemed as substitute bases.
2. Roots regularly derived from corresponding OIA bases according to ordinary phonetic rules cannot be classified as ādesas as they are in reality inherited forms from the OIA stage: thus *pīlei* < *pīdayati*.
3. Those which cannot be connected with any corresponding OIA roots by any admitted phonetic rule are true ādesas. Thus GRIERSON considers Pk. *calla-* (beside the regular *cala-*) as an ādesa for Sk. *calati*. Note:—*calaī* can be regularly derived from OIA **cālyati* for which type there are other parallel forms in MIA. The question here

is whether these bases should be classified as *ādeśas* or derived from the reconstructed OIA types for which there is some collateral evidence.

4. Roots which are regularly derived from Sk. roots, but which have changed their meaning, and which are therefore, equated by Prakrit Grammarians with, and substituted for, some other Sk. root which has a meaning more nearly akin to the acquired meaning of the Pk. root, may properly be called *ādeśas*. Thus Sk. *prekṣ-* gives rise to two forms in Pk. *pekkha-* and *peccha-*; of these *pekkha-* still retains the original meaning of 'to look at, behold', while *peccha-* has acquired the meaning of 'seeing' in a more general sense, and is hence divorced from Sk. *prekṣ-* and equated with the more general Sk. base *drś-*.

Of course all the Prakrit Grammarians are not aware of this fine distinction and we find for instance that Rāmasarma Tarkavāgīśa gives *kil-* as an *ādeśa* for *kriḍ-* and *pil-* as an *ādeśa* for *piḍ-*. GRIERSON'S rules may be accepted with some reservation from our point of view. The reservation affects the last two of his rules; in rule 3 we cannot include forms like *callai* or *aṭṭai* because they are not derived from quotable OIA bases or stems, like their doublets *calai* and *aḍai* (or earlier *aṭai*); for when we pose OIA forms like **cālyati*, **atyati* — cf. *calyate* and *atyate* of the passive system — they may easily be classified under rule 2 and omitted from the list of verbal substitutes. In the case of the last rule, is it necessary to consider them as substitute bases at all? Phonologically they are inherited forms from a common source while semantically they have differentiated along two distinct lines, as in OIA *pārayati* and *pālayati*, *śukra-* and *śukla-*. They can at best be termed synonyms of OIA bases which have a meaning nearest to what they themselves have acquired. In no sense can they be termed substitute bases or dhātva² *ādeśas*, since all synonymous voca-

bles may be called substitute-vocables of each other. The true *dhātvaḍeṣa* must be some vocable which is not IA in its origin immediately, hut which regularly appears for some IA verbal base which may or may not have gone out of usage. GRIERSON rightly considers them as borrowed *deśya* words which cannot be referred to Sanskrit at all. Etymology and Semantics cannot be separated in any discussion pertaining to this class of the verbal bases. In fact many of the OIA bases inherited in Middle and New Indo-Aryan have developed nuances of meaning which should not be classed under this system at all.

A few peculiarities of these verbal substitutes may be dealt with here. For the root *arj-* of OIA we have *viḍhava-* as an *ādeṣa* in the active, *viḍhappa-* or *viḍhavijja-* in the passive and the past passive participle *viḍhatta-* for *arjita-*. Now GRIERSON compares this to Sk. *vy-ut-pad-* under his Remarks column. But this does not explain the etymology of the *ādeṣa*. The passive form and the past passive participle show us the manner in which the present active is built. The active is derived from PMIA **viḍhapa-* *i* > MIA *viḍhavaī*, whence the passive **viḍhapyate* > *viḍhappaī* and the past passive participle **viḍhap-ta-* > *viḍhatta-*. PISCHEL connects this participle form with the base *dadh-* from *dhā-* giving **dhatta-* for *hita-* whence *ḍhatta-*; but this does not explain the forms *viḍhava-* and *viḍdhappa-* unless we accept his definition of their being the causative from *dhā-* with initial cerebralization (section 223). Similarly we have the series *āḍhava-*, *āḍhappa-* and *āḍhatta-* posing a PMIA **ā-ḍhapa-*. The difficulty in PISCHEL'S etymology is connected with the short vowel in the initial syllable, since OIA has *dhāpayati* for the active, *dhāpyate* for the passive. One way of getting over this difficulty is to consider *dhāpyate* as the origin of the passive **-ḍhappa-* whence may be derived the active base **ḍhapa-* > MIA *-ḍhava-*. I have already mentioned that the relationship

between the first and sixth conjugations of Sanskrit is paralleled by that existing between the fourth and the passive systems. Just as we notice that *calla-* and *aṭṭa-* of Prakrit may be explained by the forms **calyati* and **atyati*, we can also posit the passive stems of OIA *atyate* or *calyate* as the origin of the Prakrit stems. In fact if we come down to NIA stage we notice that in forms like *lābh-ñe* and *lādh-ñe* we have to deal with both the types *labhyate* and *labdha-*. When the sense of the original base is transitive we can posit either the passive or the *div-* type of base for the origin of the MIA, while in the case of intransitive bases the fourth-class may well explain their genesis.

LECTURE IV

NOMINAL STEM FORMATION IN INDO-ARYAN

THE study of Nominal Stem formation within the Indo-Aryan field has not made that progress which phonology, morphology, or even nominal composition have. In fact WACKERNAGEL'S volume on this subject, which is to form part ii of the second volume of his *Altindische Grammatik* and which will do for Sanskrit what DEBRUNNER'S monograph¹ has done for Greek, was in the press when the war broke out. We have in fact magnificent collections of this formation in the monograph of LINDNER,² in WHITNEY'S *Grammar and Roots*, in RENOU'S *Grammaire Sanscrite* and in MACDONELL'S two *Grammars*.³ Unfortunately the Middle Indo-Aryan grammars that we have to-day like PISCHEL'S *Grammatik der Prakrit Sprachen* or GEIGER'S *Pali Literatur und Sprache*, do not pay any attention to this important subject and sections on nominal stem formation are completely absent. This is remedied to some extent in the case of the New Indo-Aryan languages where HOERNLE gives almost an exhaustive list in his *Gaudian Grammar* and Suniti Kumar CHATTERJI deals in a scientific manner with the same problem as it affects Bengali. Even BLOCH'S *La langue marathe* eschews this topic from its main discussion, although his work inaugurated the second stage in the scientific study of the new Indo-Aryan languages.⁴ I do not wish to attempt here what these scholars have failed to do, but owing to the nature of the subject, try to trace within the Middle Indo-Aryan field, from the point of historical linguistics, the development of this important topic. So far no comparative study of the stem-formation has appeared within the Indo-Aryan branch. For the earlier period we have some excellent work by Hjalmar FRISK in his monographs on the suffixes *-tha*⁵ and *-ra*⁶ of OIA in its

Indo-European setting. But within the Indo-Aryan setting it will be interesting to see how the nominal stem-formants have developed. Our knowledge of Indo-Aryan development cannot be complete unless we have at least some idea of this development. Moreover, just as we are trying to understand the main currents of this development by concentrating on the verbal bases, it would be interesting to see how these bases lent themselves in point of time to the nominal formantia which gave rise to the huge vocabularies of Old and Middle Indo-Aryan.

The Sanskrit system consists of two series of nominal suffixes called Primary and Secondary. The Primary suffixes consist of the following:—

1. zero suffix or root stems: *dyút-* f., *cikī-* 'wise', *mī-* 'pillar'. These stems are used both as agent nouns and as action nouns.
2. *-ā*: action and agent, from which an immensely large and heterogeneous body of derivatives is made: (i) with *guṇa*: '*dy-* *aj-* course' < *i-*; *jō-* *a-* 'enjoyment' etc: (ii) with *vr̥ddhi*: *dāv-* *ā-* 'fire' < *du-* 'burn': (iii) with weak form of root-; *prī-* *ā-* 'dear' < *pri-*; (iv) reduplicated root: *dadhr̥-* *ā-* 'bold', *rerih-* *ā-* 'continuously licking' < *rih-* 'lick' etc.
3. *-a-ka-*: agent. The first suffix is primary, the second is secondary: *pāv-* *akā-* < *pū-*.
4. *-ata-*: = *-a-* + *tā-* agent: *dars-* *atā-* 'visible' < *dr̥-*, *bharatā-* < *bhr̥-*, etc.
5. *-ant* and *-at*: agent, restricted almost to active participles.
6. *-an*: action and agent. *mah-* *ān* 'greatness', *rāj-* *ān* 'guidance' *uk-* *ān* m. 'ox', *tak-* *ān* m. 'carpenter'.
7. *-ana-*: action and agent, next in frequency to the *-ā* type.

- (i) with *guṇa*: *kār-ana-* 'deed'; (ii) with *vrddhi*: *māda-ana-* 'gladdening'; (iii) with unchanged vowel: *dā'-na-* 'giving'; (iv) with weak vowel: *kṛp-aṇa-* 'misery'.
8. *-anā*: action and agent. *as-anā* 'missile'; *spand-anā* 'kicking'.
 9. *-ani-*: action and agent: *aś-āni-* 'missile'; *ar-āni-* 'fire-stick'.
 10. *-anī*: action and agent: feminine of *-ana* above.
 11. *-an-īya*: gerundive: *ā-mantra-ṇī'ya-* 'to be addressed'.
 12. *-ar*: agent. *uṣ-ār* f. 'dawn'. Found in very few words.
 13. *-as*: action and agent: *śrāv-as* 'fame' < *śru-*; *tāp-as* 'heat'; *vās-as-* 'covering'; *ūr-as* 'breast', *mṛdh-as* 'contempt', *ap-ās* 'active', *āp-as* 'work'.
 14. *-asi*: action and agent: extension of above with *-i*: *at-asil* 'beggar', *sān-asi-* 'victorious'.
 15. *ā*: action: *īś-ā* 'dominion', *apasy-ā* 'activity', etc.
 16. *-āku*: agent. Very rare. *mṛday-ā'ku-* 'gracious', *ikṣv-āku* nom. prop.
 17. *-āna*: agent. Middle participle from the present; also a few adjectives and substantives.
 18. *-i*: action and agent. (i) *rōp-i-* 'pain', *śoc-i-* 'heat'; *āj-i-* 'race'; *san-i-* 'gain'; (ii) *ar-i-* 'devout', *kārṣ-i-* 'drawing', *granth-i-* 'knot', *gṛ'bh-i-* 'container', *cākr-i-* 'active' *dādhrṣ-i-* 'bold' etc.
 19. *-in*: agent. *-sakṣ-in-* 'overpowering'.
 20. *-iṣṭha*: agent. superlative *vār-iṣṭha-*
 21. *-is*: action. *arc-is* 'flame', *jyōt-is* 'light' etc.
 22. *-ī*: action and agent: (i) *nad-ī* 'river'; (m) *ah-ī* 'serpent'.
- .. It is also used secondarily as the feminine suffix.

23. *-ika*: action and agent. *mṛḍ-ikā-* 'grace', *par-phar-ika-* 'filler'.
24. *-īyāms*: agent. Comparative suffix,
25. *-u*: agent. *ur-ū-* 'wide', *prth-ū-* 'wide or broad'; *gṛh-ū-* 'beggar'.
26. *-uka*: agent. consists of the above and the secondary *-ka*. *ghā't-ū-ka* 'killing'. RARE in the Samhitās.
27. *-us*: action and agent: *dr-us* 'wound'; *nāh-us* 'neighbour'.
28. *-ū*: fem. substantives: *cam-ū* 'dish', *vadh-ū* 'bride' etc.
29. *-ūka*: intensive adjectives: *jāgar-ūka-* 'wakeful'.
30. *-ka*: agent: ordinarily a secondary suffix, but used rarely in the primary sense: *āt-kaḥ* 'garment', *śiṣ-ka-* 'dry', *sto-kā-* 'drop' etc.
31. *-tā* agent. almost exclusively for past passive participles; sometimes with adjectives or substantives.
32. *-tar*: agent. *nē-tar* 'leader' etc.
33. *-tas*: action. *sró-tas* 'stream', *ré-tas* 'semen'.
34. *-ti*: action and agent. *iṣ-ti-* 'desire', *ma-ti* 'thought'; *jñā-ti-* 'relative'; *dhū-ti-* 'shaker' etc.
35. *-tu*: action and agent: *ō-tu-* 'weft', *krā-tu-* 'capacity'; *ak-tū-* 'ray', *gā-tū-* 'way' etc.
36. *-tna*: action and agent. *rā-tna-* 'gift'.
37. *tnu*: agent. *kṛ-tnū-* 'active'; *kav-a-tnū-* 'miserly'; *tanay-i-tnu-* 'thundering' etc.
38. *-tra*: agent. *jāi-tra-* 'victorious', *dāmṣṭra-* 'tusk'; *dm-a-tra-* 'violent'.
39. *-tri*: agent. *rā'-tri* 'night'; *śā-tri* nom. pr.; *ā-tri-* 'devouring'.

40. *-tru*: agent. *śā-tru-* (< **śāt-tru-*) 'enemy'.
41. *-tva*: agent. *kār-tva* 'to be made'. Probably < *-tu -a*:
42. *-tha*: action. *ār-tha-* 'goal'; *ay-ā-tha* 'foot': *jār-ū-tha-* a kind of demon'. Cf. *Suffixales tha* by Hjalmar FRISK.
43. *-thi*: agent. *dt-i-thi-* 'guest', *me-thi-* 'pillar'.
44. *-thu*: action. rare suffix; *vep-ā-thu* 'quivering'.
45. *-na*: action; parallel to *-ta* for past passive participles: *bhinna-* < *bhid-*. adjectives: *ās-na-* 'voracious', *nag-na-* 'naked'; substantives: *ghṛ-na-* 'beat', *budh-na-* 'bottom' etc.
46. *-nas*: action: *āp-nas* 'possession'. Cf. *-as* and *-tas*.
47. *-ni*: action and agent: *jūr-ni-* 'beat', *me-ni-* 'missile': *ag-ni-* 'fire', *tūr-ni-* 'speeding'.
48. *-nu*: action and agent: *dā-nu-* 'demon', *dhe-ni-* 'cow'; *grdh-nū-* 'hasty'.
49. *-pa*: concrete substantives. *pūs-pa-* etc. GHOSH'S recent contribution to the establishment of this *p* as a nominal and verbal suffix is a painstaking and carefully executed work.⁸
50. *-mā*: action and agent. *tīg-mā-* 'ordinance' etc. A prolific suffix.
51. *-man*: action and agent: *ād-man-* 'food', *nā-man* 'name'; *dar-mān-* 'breaker', *bhūj-mān-* 'fertile':
52. *-māna*: agent, chiefly for middle participles of the present, future and aorist.
53. *-mi* and *-mī*: action and agent. *ūr-mi-* 'wave'; *sūr-mī* 'tube'.
54. *-min*: agent. Perhaps a secondary suffix in *dhūm-in* < *dhūma-*: primary in *iṣ-min* 'impetuous' *bhā-min* 'shining'.

55. *-ya* : gerundive.
56. *-yu* : action and agent. *man-yu*- 'anger'; *da's-yu*- 'enemy'.
57. *-ra* : agent. A large number of derivatives: see FRISK's monograph on this suffix.
58. *-ri* : agent *bhū-ri*- 'abundant'; *a'ñgh-ri*- 'foot'.
59. *-ru*- agent. *cā-ru*- 'dear', *pē-ru*- 'causing to swell'; *a's-ru*- 'tear', *śma's-ru*- 'beard'.
60. *-la* : agent: cf. *-ra*; *śuk-la*- 'white colour'; *mis-a-la*- 'pestle'; *a'n-i-la*- 'wind'; *tañḍ-u-la*- 'grain'.
61. *-li* and *-lu* : agent. *añg-i-li*- 'finger' (cf. *-ri*); *patayā-lū*- 'flying' (cf. *-ru*).
62. *-va* : agent. *rk-va*- 'praising'; *tak-va*- 'swift'; *ṛbh-va*- 'skilful'.
63. *-van* : agent. *ṛk-van*- 'praising', *pī-van*- 'fat'.
64. *-vana*, *-vani*, *-vanu* : agent. Doubtless secondary forms of the preceding. *vag-vana*- 'talkative'; *tur-va'ni*- 'overcoming'; *vag-vanu*- 'noise'.
65. *-vara*, *-vala* : *iś-vara*- 'able', *i-t-vara*- 'going'; *vid-vala*- 'cunning'.
66. *-vāms* : agent. chiefly for perfect participles.
67. *-vi* : agent. *jā'gr-vi*- 'watchful'; *dār-vi*- 'ladle'.
68. *-vit* : agent. *cikit-vit*- 'deliberately', perhaps an extension of the preceding one.
69. *-sa* : agent. *gr't-sa*- 'adroit', *prē-śa*- 'dappled'; *tav-i-śa*- 'strong', *ṛj-i-śa*- 'rushing', *ta'r-u-śa*- 'overcomer', *pīy-ū-śa*- 'biestings'.
70. *-sani* : agent. *car-śani*- 'active'.
71. *-sara* : agent. *sap-sara*- 'inspiring awe (?)', *mat-sara*- 'intoxicating' < *mad*-.

72. *-sas* : action. *váp-sas*- 'heauty'.
 73. *-sna* : ageot. *tík-ṣṇá*- 'sharp', *de-ṣṇá*- 'gift'.
 74. *-snu* agent. *ji-ṣṇú*- 'victorious'; *tāpay-i-ṣṇú*- 'tormenting'.

The Secondary Suffixes consist of the following :

1. *-a* : (i) with *vrddhi* : from primary derivatives, *mā'rut-a* < *marūt*-; (ii) without *vrddhi* : *paruṣ-a*- 'knotty' < *pá'rus*- 'knot'.
2. *-ā* : femioioe from masc. io *-a* : *na'v-ā* < *na'va*- m.n.
3. *-ānī* : fem. designating the 'wife' : *indrānī* < *indra*-, *arany-ānī* < *a'raṇya*- etc.
4. *-āyana* : patronymics with *vrddhi* : *āmuṣy-āyana*- < *amūṣya*-.
5. *āyī* : fem. designating wife : *agn-āyī* < *agni*-, *vṛṣākapi-āyī* < *vṛṣākapi*-.
6. *-āyya* : gerundives as *śrav-ā'yya*- 'glorious' < *śru*-, etc.
7. *-i* : patronymics with *vrddhi* : *ā'gni-ves-i* < *agniveśa*-.
8. *-in* : prolific suffix : *ark-in* 'praising' < *arka*- 'praise' etc.
9. *-ima* : cf. RENOUE, Le suffix *-ima* io *Festschrift Winternitz*.³
10. *iya* : from stems io *-a* : *abhr-ya*' 'derived from the clouds' < *abhra*'-.
11. *ina* : adj. from weak stems of derivatives in *-ānc*- : *arvāc-i'na*- < *arva'nc*-.
12. *-iya* : *parvat-i'ya*- < *parvat*- *a*; also *tur-i'ya*, *dvit-i'ya*- etc.
13. *-ena* : with *vrddhi* : *sāmidh-enī* 'relating to fuel' < *samidh*-.
14. *-enya* : nearly always has a primary value as forming gerundives : *drś-ēnya*- 'worthy of being seen'; *kīrt-ēnya*- < *kīrti*-, *vīr-ēnya*- < *vīra*'-.

15. *-eya* : (i) with *vrddhi*: *ārṣ-eya'* - (ii) without *vrddhi*: *dēyā- < dā-, sabh-ēya- < sabha'*.
16. *-eyya* : gerundive; *stuṣ-ēyya-* 'praise-worthy'.
17. *-ka* : as pleonastic mostly, but also in other senses : (i) significant in *a'nta-ka-* 'making an end' < *a'nta-*; (ii) without change in sense *dūra-ka'-* : *dūrā-* 'far'; (iii) diminutive : *arbha-kā-* 'small'; (iv) with *vrddhi*: *māma-ka'-* 'belonging to me' : *mā'ma*
18. *-ta* : rare, has ordinal sense : *eka-ta'-*, *dvi-ta'-*, etc.
19. *-tana* : *nū'-tana-* 'present' < *nū'* 'now'; *pra-tna'-* 'ancient' < *pra'-*.
20. *-tama* : (i) with superlatives : *puru-tā'ma-* 'very many', *ut-tamā-* 'highest'; (ii) with numerals to form ordinals : *śata-tama'-* 'hundredth'.
21. *-tara* : comparatives ; *tava's-ta'ra-* 'stronger'; substantives : *vatsa-tara'-* 'weaned calf'.
22. *-tav-ya* : gerundive- *jan-i-tavyā-* 'to be born' etc.
23. *-tā* : abstract nouns : *bandhū-tā-* 'relationship', *vasū-tā* 'wealthiness' etc. Exceptional *mama'-tā* 'selfishness', *trē-tā* 'triad'.
24. *-tāti-* and *-tāt* : cf. prec.; *a-riṣṭa'-tāti-* 'the being seized'; *deva'-tāt* 'divine service'.
25. *-tya* : from prepositions and adverbs : *a'pa-tyam* 'offspring', *ama'-tyaḥ* 'companion' < *ama'* 'at home'.
26. *tva* : abstract nouns : *amṛta-tva'-* 'immortality'.
27. *-tva-tā* : *iṣṭa-tvātā* 'excitement', and *puruṣatva'tā* 'human nature'.
28. *tvana* (*-tva-na-*) : *kavitvana'-* 'wisdom', *jani-tvana'-* 'state of a wife' etc.

29. *-thā*: ordinals: *catur-thā* 'fourth', *ṣaṣ-thā* 'sixth'; adjectives from pronominal stems: *·kati-thā-* 'the how manieth?'.
30. *-na*: with initial *vṛddhi*: *strā'ina-* 'feminine' < *strī* 'woman'. adjectives: *purā-na-* < *purā*.
31. *-nī*: fem. of *pāti-* and *paruṣ-ā-*: *pāt-nī*, *pa'ruṣ-nī*: substitute for *-ta* in *é-nī* 'variegated' < *é-ta-*, *róhi-nī* 'red cow' < *róhi-ta-* 'red' etc.
32. *-bha*: *ṛṣa-bha-* and *viṣa-bha-* 'bull'; one adjective *sthūla-bha-* < *sthūla-* 'big'.
33. *-ma*: superlatives: *adha-ma-* 'lowest': ordinals: *pañca-ma-* 'fifth' etc.
34. *-mant*: possessive adjectives; cf. *-vant*.
35. *-maya*: *ayas-maya-* 'made of metal' etc.
36. *-min*: cf. *-in*; *dhūm-in* 'smoking' < *dhūma-*.
37. *-mna*: *ni-mna-* 'depth' < *ni* 'down'.
38. *-ya*: adj. and partonymics: *da'ivya-*, *a'r-ya-* etc.
39. *-yīn*: cf. *-in*; *ātātā-yīn* 'having one's bow drawn' < *a'-tata-*, *svadhā-yīn* 'owing the Svadhā'.
40. *-ra*: (i) superlatives: *a'dha-ra-* 'lower' *a'pa-ra-* 'later' etc.; (ii) adj.: *dhūm-ra-* 'grey', *pāmsu-ra-* 'dusty'; (iii) substantives: *karma-ra-* 'smith', *muṣka-ra-* 'a kind of small animal'. Cf. FRISK'S monograph on the *-ro-* suffix in Aryan.¹⁰
41. *-la*: cf. *-ra*; *aśū-la-* 'ugly', *kapi-la-* 'brown' etc.
42. *-vat*: abstract subst. fem.: *aroā-va't* 'proximity', *ni-vāt* 'depth'.
43. *-van*: *ṛṇā-va'n* 'indebted'.
44. *-vant*: cf. *-mant*;
45. *-vaya*: rare; *ca'tur-vaya-* 'four-fold' *dru-va'ya-* 'wooden dish'.

46. *-vala*: *kṛṣī-vala*— 'peasant' < *kṛṣī*— 'tillage'.
47. *-vin*: cf; *-in* and *-min*; *ubhayā-vin* 'partaking of both' < *ubha'ya*—; *yaśas-vin* 'beautiful'.
48. *-vya*: kinship terms: *bhrā'tṛ-vya*— '(father's) brother's son', *pitr-vya*— etc.
49. *-śa*: adjectives: *yuva-śa*— 'youthful'; substantives: *aiku-śa*— 'hook', *kala-śa*— 'jar'.

In the two lists enumerated above we have altogether 74 Primary and 49 Secondary Suffixes as found in the earliest stage of Old Indo-Aryan. The productivity of each suffix is naturally dependent on its importance; but it will be interesting to compare the productivity in the course of historical evolution, for just as vocabularies are capable of being preserved in inherited forms or replaced by new vocabularies, so also these suffixes are capable of being inherited or replaced by newer suffixes. The measure of the change and its venue, when determinable, will prove of immense value in the progress of historical linguistics.

I shall briefly summarise the state of affairs for classical Sanskrit so far as nominal derivations is concerned from RENOU's excellent survey.¹¹

- A. The primary type furnishes nouns related in sense to the verb, the function being that of verbal nouns, nouns of action or agency, and more rarely pure adjectives.
- B. The Secondary type furnishes derivatives of an abstract value, collectives, adjectives of appertenance, and finally a grammatical category — the feminine.
- C. From the practical point of view it is difficult to distinguish rigorously these two types, as in *deśya*— which, according to its sense, may be either < *deśa*— or *diś*—; the suffix *-trima* may be unitary or *tṛ*— and *-ima*; *-āra* may be unitary or *ā* and *ra*—, etc.

D. A general tendency is seen to constitute nouns of a primary aspect around false radicals; thus the bases *kuṭ-*, *sthūl-*, *ned-*, *gaj-* etc. are formed on *kuṭila-*, *sthūla-*, etc.

1. Adjectives in *ta-* (*na-*): the suffix *ta-* or *ita-* for past passive participles; there are indications of the use of *ta-* for *ita-* or vice versa: *kṣipita-* for *kṣipta-* and *vitta-* for *vidita-*.

2. The suffix *-vant-* is attached to verbal derivatives in *-ta-*, giving rise to adjectives having the value of past participles active;.

3. Adjectives of obligation in *ya-*, *tavya-* and *anīya-*:—

ya-: *bhedyā-*, *bhid-*, *klāpya-*: *klp-* etc.

tavya-: corresponds to the infinitives: *vartitavya-*: *vartitum*.

-anīya- rarer than the above; rare even in the epics;

dāpa- *nīya-*, *gaṇanīya-*, *sukhanīya-* etc.

The accessory forms under this head are:

(i) *tva-* Vedic, subsisting lexically in *janitva-*, *soṭva-*, and *sugantva-*, *jetva-*.

enya- Vedic, remaining with nuance *arhe* to desiderative bases *śikṣeṇya-* 'instructive', *didṛkṣeṇya-* in sūtra literature; *īdenya-* Ragh.;, *vareṇya-* in ep. and cl., *bhajeṇya-* in pur.

elima- Vārtt. Pat. cites *pecelima-*; *bhidelima-* is found in Jānak:

āyya-: *paṇāyya-*: *paṇāyati*; probably *ya-* extension of *āy-*;

4. Agent Nouns;

tr-, productive at all periods, gives nouns of a durative quality; side by side appears in adjectival employment.

in- furnishes verbal adjectives, fairly large in number, above all from the epic period (rare in Veda), and by preference applied to animate nouns.

aka- furnishes numerous adjectives. A variant *-āka-* is taught by Pāṇini for several non-alternating bases; forms attested in the later period are: *jalpāka* in Harṣṣ, *kullāka* in Mālm., *luṭṭāka*-, *bhikṣāka*-, etc.; *patākā* ved. and cl., *°smayāka* in TĀ, *pracalāka* ved. and cl., *vidāka* and *hevāka* etc.

uka- furnishes a certain number of derivatives having the value of durative participles: the productive epoch of this is both Br. and Sūt. but the kāvyas also present many forms with nuance of meaning. *lambhuka*-, *bhāvuka*-, *varṣuka* etc. A variant *ūka-* is found in *jāgarūka*-, *vāvadūka*-, *dandaśūka*-, *jañjapūka*-, *yāyajūka*-, etc., being a rhythmic substitute for *uka*-.

u- is attached productively to desiderative themes: having a participial sense: *pipṛkṣu*-, etc. whence a new suffix *su-* in *anunīṣu*-, *pravadiṣu* etc.

The ancient derivatives in *u-* from causatives and denominatives have disappeared since the sūtra period. From *mṛgayu*-, etc. a new suffix *-yu-* or *āyu-* of the secondary type has developed: *annāyu*-, *ūrṇāyu*-, *ṛtāyu*-, *gilāyu*-, etc.; cf. Vedic. *śam-yu-*.

A certain number of adjectives: denuded from verbal values: *trṣ-u-*: *trṣ-ā*.

ana- forms nouns with participial value; the productivity of this suffix is very much restricted in classical Sk. numerous adjectives: *rocana*-, *celana* etc.

a- furnishes an infinitely large number of derivatives, with various meanings. It is productive in all periods of IA.

zero grade of the root: *vikṣīpa-*, *°muca-*, *°sṛśa-*, *°dagha-*;

guṇa: *°kara-*.

vṛddhi: *°kāra-*.

insertion of *-y-*: *dāya-*, *avasthāya-* etc.; a majority of these are passive: *°manya-*, *°paśya-*, etc.;

nasal present stems: *°daghna-* < *daghnoti*; *°puna-* *°āśnuva-*, *°kr̥nta-* etc.

-snu-, more frequently *-i-ṣṇu-*, functions with adjectives having a durative sense: *jayiṣṇu-*.

Has secondary sense in *ulbaṇiṣṇu-* *ΛĀ*.

itnu- furnishes several expressive nouns, with bases in *-ay*: *stanayitnu-*, *hr̥dayitnu-* etc.

-nu- may be inferred from *bhā-nu-*, *dhe-nu-*, *sū-nu-*, *sthā-nu-*, *re-ṇu-*, etc.

i- is parallel to *u-* and yields adjectives: *śuci-*, *jani-*, etc. A certain number of forms belonging to this type in the earliest stage seems to go over to the *-in* type: RV. *paśu-rakṣi-* > Mn. *°rakṣin-*.

an-: *takṣan-*, *kṣīban-*, *ukṣan-*, *vṛṣan-* etc.; the suffixal nature of this *-an-* is doubtful; it forms an enlarging element of certain nouns.

man- furnishes a certain number of agent nouns, but the type loses its productivity in classical Sk. *dāman-* Mabh., *sadman-* Rām. It is secondary in *kakudman-* < contamination with *-mant-*. *van-* and *tvan-* figure in several adjectives, partially verbal: *°dṛśvan*, *yajvan-* cl. and ved, *sulvan-* ved. In Vedic this suffix existed also in a secondary sense.

A parallel suffix which has come into existence more recently than the above is *vara-* and *tvara-*; these have

supplied in the earlier stage only the feminine type of the above suffixes: *sadvara-*, *iśvara-* véd.

mara- after a dental is a variant of *vara-*: *ghasmara-* cl.: ved. *ghasvara-*; *admara-*, *sṃmara-*.

Formations which are more or less the most productive have for their centre an *r*, preceded partly by a vowel of uncertain timbre.

ra- is the most important in this group: *sthi-ra-*, *cit-ra-*, *smera-* etc.; a variant is *-la-*: *śuk-la*, *sthū-la-* cl.: véd. *sthūra-*.

ira-, *-ila-* (<*-i-ra-*, *-i-la*): *madira-*, *kampila-*, *salila-*; as a doublet in *sthūra-*: *sthavira-*.

ara-, *ala-* in some forms: *kartarī*, *bhramara-*, *capala-*, *bhasala-* etc.

ura- in expressive words: *bhās-ura-*, *vid-ura-*, *vith-ura-* etc.

ula- in Mhbh. *°tarṣ-ula*.

ru- after a long vowel; *bhī-ru-* (P. *bhī-lu-ka-*), *dhā-ru-*, véd. *se-ru-*, *cā-ru-*, etc., whence *-t-ru* in *ha-t-ru-*.

ri- after *u* *v*: *bhū-ri-*, *śubh-ri-*, *vañk-ri-*, whence *-u-ri* in *ghas-u-ri-*.

ma-: a small series of Védic origio: *tig-ma-*, *śag-ma-*, *bhī-ma-*, etc.

ni- in several ancient forms: *vṛṣṇi-*, *vahni-*, *°uṣṇi-*, *āśni-*, etc.

vi- after a vowel, of reduplicated bases: *jāgr-vi-* (P), *dīdi-vi-* véd.

va- is a partial corruption of *vāms-* and *van-* respectively in lex. *dāśva-* and *pīva-*; authentic only in a few forms like *°padva-* Dās., *°pak-va-*, *hras-va-*, (doubtful).

īva- in *am-īva-*;

avī- in *aṭ-avī*

anta-, primary in appearance, of a late date, noted in Uṇādi and lexicons, reposes on the participial suffix enlarged, particularly fem. *-antī*: attested in *jay-anta-* Śiś., *s-anta-ka* Div. etc.;

-aṇḍa- (MIA variant) in *jar-aṇḍa-*.

5. Action Nouns.

ti- fem. parallel to forms in *-ta-*: *purohiti-*: *purohita-*; later *-iti-* with more recent bases: *kuc-iti-*, *bhaṇ-i-ti-* etc.

Is secondary in *yuva-ti-*, *patti-*, *padāti-*, etc.

ati- in *vas-ati-*, *amh-ati-*, *vah-ati-* etc.

ni- is comparable to the above: *glā-ni-*: *glā-na-*; *hā-ni-*, *pū-ni-*, etc.

-uni- is archaic: *hrād-uni-* ĀpŚŚ.

-ani-: (a) verbal, after a priv. *abhav-ani-*, *ajan-ani-* etc. (b) non-verbal, furnishes some nouns, depending upon the confusion of *anī* fem. of *ana-*: *dhamani-* < *dhamanī*, *varāni-*, *saraṇi-* etc.

tu- in an ancient group, not productive in classical Sk.: *he-tu-* *han-tu-*, *tan-tu-* etc.

-i-tu- influenced by the infinitive: *jīv-i-tu-* 'life' found in the Bower Ms. (5th cent. A.D. ?) < ved. *jīvātu-*?

-atu-: *edh-atu-* 'prosperity', *vah-atu-*.

as- neutres: *cakṣ-as-*, *man-as-*, *śrav-as-*; observe analogical forms like JSk. *kāyas-* after *manas* and *vacas*; in Vedic this suffix also produced adjectives, a usage lost in cl. except in the word *Vedhas-*.

tas- after short vowels; but *guṇated*: *sro-t-as-* < *sru-*, *re-t-as*, *śro-t-as-* etc.

vas- in Ved. *vari-vas* (apparently *variman* and **varav-* as) in the derivation of *varivasyati*.

is- in early formations: possibly enlargements of *-i-* forms: *chard-is* cl.: *chardi-* S. cl., *chad-is*: *chad-i-* etc.

us- in *cakṣ-us-*, *yaj-us-*, *ar-us-*.

man- neutres give several concrete nouns: *veś-man-*, *varī-man-*, *bhar-n.an-* etc. — a survival of a large production group of Vedic.

Several masculines: *sīman-*; *śuṣman-*, more recent word; *bhūman-*.

mna-, by thematisation, as a secondary suffix in *dyumna-*, *nṛmṇa-*, *nī-mna-* etc.

ana-, identical with the agential suffix, furnishes an unlimited number of derivatives: *dāna-*, *yojana-*, *manana-* etc. It is equally applicable to derived bases: *śuśrūṣaṇa-*, *cañ-kramaṇa-*, etc.

tra-: *yan-tra-*, *man-tra-*, *kṣe-tra-*, *vas-tra-* etc.; *-i-tra* in *khan-i-tra-*, *jan-i-tra-* etc.; *vād-i-tra-* and *cār-i-tra-* with *vṛddhi*. Certain forms in *-tra* with *vṛddhi* belong to *-tṛ-* and not here.

-atra- in *gāy-a-tra-*, *pat-a-tra-*, *kṛnt-a-tra-* etc.

-utra- in *var-u-tra-* lex., *varūtra-*,

trā occurs in *mātrā*, *dañṣṭrā*, *hoṭrā* etc.

atrā in *var-a-trā*.

ā are feminines like nouns in *-ti*: *sev-ā-*, *lajj-ā*, *kṛp-ā*, etc. *bubhuṣ-ā*; *cikhyāpayiṣ-ā*; *rorud-ā*, *°kāmyā*.

a-: a considerable group: masc. identical with agential nouns; *deh-a-*, *bhār-a-*, *bhar-a-* etc. *trṣ-a-* is secondary < *trṣā*.

- i-*: ordinarily fem. nouns: *drś-i-* 'view', *yudh-i-* etc.: non-verbal in sense: *vāpi-*, *vāsi-* etc.
- u-*: parallel to above: *bandh-u-* véd. cl. etc.
- thu-*: masc. nouns, already rare in the ancient period, indicating noise, morbid manifestations etc.
- athu-*: *vep-a-thu* 'trembling', *klad-a-thu-* etc.
- tha-*: neut. (masc. not used in cl. except *niśītha-* and *tīrtha-*): *uk-tha-*, *sik-tha-* etc.
- agential in (*surā*)-*pītha-*.
- atha-*: *rav-a-tha-*, Véd. S., *klam-a-tha-*, etc. cf. *-a-thu-*.
- ūtha-*: *var-ū-tha-*, *jar-ū-tha-*.
- thi-* in *vī-thi-*, *me-thi-*.
- aka-* gives fem. *-ikā*: *pravāh-ika-*.
- yu-* masc. in *mṛ-t-yu-*.
- ya-* neut. *yā-* fem. (and *-t-ya-*, *-t-yā*) from Vedic: *°ijyā*, *hatyā*: *hatya-*. Masc. rare: *rāja-sūya-*.
- ma-* masc. and *mā* fem. represent: (1) partly stems thematised from *-man-*: *dharma-*, *yāma-*, *sīmā-* (*sīma-* in inscr.); (2) independent forms: *idh-ma-*, *so-ma-*, *ghar-ma-* etc.
- mi-* in *ūr-mi-*; *bhū-mi-* is secondary.
- na-* masc. after consonants: *yat-na-* (explained by Pat. as from **yatana-*),¹² *yaj-ñā-*, *praś-na-*, etc.
- nā* if the radical vowel is long: *se-nā*, *yāc-nā*, *sūnā*, *sthūnā*, but Véd. *śūna-*.
- una-* in *vay-una-*, ved. and pur., *karuna-*, *piśuna-* etc.

SECONDARY TYPE.

tā fem. furnishes a productive group: *vīra-tā*, *gurutā*.
atā in *diś-a-tā* Mhv. These formations, relatively rare in classical literature, develop without limit in late Sk.

tva- neut. less frequent in literature, becoming productive in technical postvedic language.

tāti of ved. ceases to exist in cl. Sk. Pāṇini indicates only *śrīvātāti*, *devatāti*, etc.¹⁸

iman- furnishes abstract nouns masc. *gar-iman*: *garīyānis-*.

without *-i-* after *u* in *ṛju-man-* etc.

Patronymic suffixes are :

a-: *dāśarath-a-*

ya-: *gārgya-* < *garg-i*.

eya- (metronymic): *gārgeya-*

āyana-: *gārgyāyana-*.

āyani-: *gārgyāyani-*.

aki-: *sandhātaki-*

ika: *gārgika-*

īya-:

āyanya-:

yāyani-:

ineya-:

īna-: *kānīna-*

era-: (pejorative): *kāṇera-*

kāyani-: non-attested.

āra- (form current in N. P): non-attested.

tara- comparative suffix :

tama- comparative suffix :

īyānis- comparative suffix :

iṣṭa- superl. suffix :

ra- and *ma-* appears secondarily after several particles :

avara-, *avama-*, etc.

la- variant of *ra* in ved. s. *upala-*.

vant- and *mant-* furnish adjectives.

in- furnishes numerous derivatives adjectival in value.

min- after guttarals or long vowels: *vāg-min-*, *go-min-* etc.

vin- is seen in (1) themes in *-as*: *tejas-vin-*, *yaśas-vin-* etc.; (2) themes in *ā*: *medhā-vin-*, *māyā-vin-*: (3) *vidusvin-*, *yaj-vin* etc. where it appears to be of the primary type.

ka- is used in infinite variety.

ika- issued from above, through the intermediary fem. *-ikā-* *māsika-*, *ardhika-*, etc.; perhaps primary in *sphaṭ-ika-* < *sphaṭ-*, *kṛṣ-ika* etc.

īka-: *puṇḍar-īka-*: Ved. *puṇḍarī*^o (?); *śāktika-* < *śakti-* etc.

īku-: *drś-īku-* with variant *drśika-*.

ku-: in *hlī-ku-* mentioned in UpādiS.

āka-: *ek-ākin-*; besides, *chattrākam*, *śalākā-*, *taṭāka-*, etc.; of primary *āka-*.

tika- in *śauvastika-*, *śāśva-tika-*, *haiman-tika-*, etc.

ya- furnishes a majority of adjectives, substantives indicating direction, etc. Fem. *yā* in several nouns: *brahmanyā*, *rathyā* etc.

īya- represents from the ancient period a resolution after consonantal groups: *samudri-ya-*, *aṣṭri-ya-* etc.

īya-, rare in the Samh., but productive since the sūtra period: *yauvanīya-* (with *vṛddhi*), *śataikīya-* (without *vṛddhi*); *tīya-* in *mukha-tīya-*, *eka-tīya-* and *pārśva-tīya-* etc.

aya- (doubtful) in *druv-aya-* (P), *hiranyaya-* etc.

eya-: *śileya-* and *sabheya-* alone without *vrddhi*, rest with *vrddhi*: *śaileya-*, *gāggeya-* etc.

Grammarians mention enlargements in *ineya-*, *eyin-*, *eyaka-*.¹⁴

a-: furnishes numerous derivatives with and without *vrddhi*: *raudra-*, *śāsuvata-* etc.

ī: fem. *mādhurī*, *vaicitrī* etc.

ā fem.: *vācā*: *vācī* etc. in late Sk.

īna-: *tailīna-*, *māsīna-*, *grāmīna-* etc.

ina- is derived from *-in* stems: *barhiṇa-*, *malīna-* etc.

maya-: *gomaya-*, *vāṇimaya-* etc.

ima-: *trima*, *sek-ima-* etc. Cf. *-elima-*.

thya- in *avi-thya-*, *ajathya*.

va- in *keśa-va-* ved. S., *hiraṇyava-* Varo., *aṇava-* etc.

āva- in *kurar-āva-*, *bimb-āva-*, *iṣṭak-āva* etc;

śa- as an enlargement of adjectives of colour: *babhru-śa-*,

kṛṣṇa-śa-, ; other adj.: *taru-śa-*, *loma-śa* etc.

sa- in some adjectives not attested: *trṇa-sa*.

Primary in *utsa-*, *grī-sa-* etc.

iṣa- in *kar-iṣa-*, *puriṣa-*, *tarīṣa-* etc.

sa-ra- in *mat-sara-*, *samvatsara-*.

na-: *jyotsnā*, *strai-ṇa-* etc.

pa-: *puṣpa-*, *stūpa-* etc.

kha-lā: *śrīn-khalā* (and *°la-*), *me-khalā*.

(a) *mba-* cf. IF 34,222 and 35,246 f.

nya-: *nīnya-* Ved.

anta- see above under primary suffixes.

da-:

ta-:

ṭha- in *jaratṭha-*, *karmatṭha-* etc.

Suffixes in *-r-* and *-l-* :

ra- : diminutive : *śamīra-*, *śuṇḍāra-* etc. ; adj. *mukhara-*, *dhūmra-* etc. ; enlargement : *sīdhura-*, *mandara-* etc. ;

la-, more living than *ra-*, has the values of *ka-* secondary : *bandhu-la-*, *bahu-la-* etc.

āra- : *karmāra-*, *vṛndāra-ka-*, etc.

āla- : *śabdāla-*, *vācāla-* etc. ;

ṭa- and *āṭa-* : *caratṭa-*, *vācāṭa-*, etc. are parallel to the *l-* forms.

ila- : *jaṭila-*, *picchila-*, etc.

ira- exceptionally : Ved. *medhira-*, *rathira-*.

īla and *īra-* : *nābhīla-*, *āṇḍira-*.

ura-, *ula-* : *kacchura-*, *dantura-* ; *harṣula-*, *kaṇḍula-*, all attested in late Sanskrit literature.

ūla- : *balūla-* in Vārt. explained as *balāni na saḥate* ;¹⁵ *vātūla-*, etc.

era- : *dāsera (ka)-*, *nālikera-*, *gaudhera-*.

ola-, *ora-* : *hiṇḍolā-*, *āndola* ; *kaṭhora*, *kiśora-*, *cakora-*, *rīṇchoṭi* etc.

āru- and *ālu-* : *śitālu-*, *trpālu-* etc. ; *patayālu-*, *spṛhayālu-* etc. ; the *-r-* forms are ancient.

elu- (Ved. *-eru*) : *himelu-*.

vala- : *rajas-vala*, *ūrjas-vala-* etc. Variant is *-vara-* in late Sk.

ī of collective nouns : *sarasī* 'lake' ; augmentative : *himānī*. *ānī* : *himānī*, *aranyānī* etc.

bha- : *garda-bha-*, *rasa-bha-*, *vṛṣa-bha-* etc.

ga- : *sāraṅga-*, *piśaṅga-* < *piśa-*, *bhuja-ga*, *pata-ga-* etc.

tya- : *tatratya-*, *nitya-* etc.

tyaka : *upatyakā*.

vat- : *pravat-*, *udvat-* etc.

vya- : kinship terms : *pitṛvya-*.

I have given above in somewhat great detail the essential features of Classical Sanskrit nominal stem formation. Let us compare the suffixes here with the corresponding Vedic suffixes before proceeding to build up a comparison with Middle Indo-Aryan. Suffixes productive in a given period of the language need not necessarily be so in a subsequent epoch; but at the same time there is no reason why they should not survive either in a few inherited words or as a productive group in the newer stage.

Some of the Vedic suffixes are not productive in later Sanskrit such as *-tāti-*, Pāṇini mentioning about three forms in all.¹⁶ Adjectives in *-as* are numerous in Vedic, a usage lost in classical Sk. except for the word *Vedhas*. Similarly *-tu* is a Vedic suffix, not productive in classical Literature at all, except for inherited vocables from the earlier stage. Forms in *-man* again are a survival of an ancient productive group. *-van* as a secondary suffix is confined to Vedic alone; on the other hand the variant *-mara-* for *-vara-* is confined to the classical period. *man-* loses its productivity in classical Sanskrit. While *tva-na-* is common to the Vedic, *-tva* alone is seen in literature, at first rare, but becoming more productive in post-vedic technical literature.

It follows from this brief survey of the essential features of the problem that several important productive groups of Vedic have survived only in inherited vocables of classical and later Sanskrit, while certain new suffixes have become productive in this period. Future research must concern itself with the problem of when and where these changes took place, reconstructing the whole history backwards from our knowledge of Middle

Indo-Aryan in all its aspects, including the critical editions of texts like that of the Great Epic of the Bhāratas.

Before turning our attention to the question of nominal stem formation in Middle Indo-Aryan, let us consider for a moment the phonological changes which may affect these OIA suffixes. The discussion below will merely take into account not the actually attested MIA suffixes, but the phonological equivalents in MIA of the attested OIA suffixes :

1. Root stems : cannot exist in MIA since all bases are thematized, and therefore go over to the *-a* suffix.
2. *-a* : remains as *-a* : *ved-a* : Pa. *ved-a-*, Pk. *ve-a-*.
3. *-aka-* remains as *-aka-* in Pāli, but > *-aa-* in Pk.
4. *-ata-* > P. *-ata-*, Pk. *-aa-*.
5. *-at-* and *-ant-* > Pa. Pk. *-anta-*
6. *-an-* : irregular in Pa. and Pk.
7. *-ana-* > P. *-ana-*, Pk. *-aṇa-*.
8. *-anā-* > Pa. *-anā-*, Pk. *-aṇā-*.
9. *-ani-* > Pa. *-ani-*, Pk. *-aṇi-*
10. *-aniya-* > Pa. *-aniya-*, Pk. *-aṇiya-*,
11. *-ar-* > Pa. Pk. irregular *-ā* or *ā-*.
12. *-as-* > Pa. Pk. *-a* or irregular *-as* in morphology.
13. *-asi-* remains unchanged.
14. *-ā* remains unchanged.
15. *-āku-* > Pa. *āku-*, Pk. *āu-*.
16. *-āna-* > Pa. *-āna-*, Pk. *āṇa-*.
17. *-i* remains unchanged mostly.
18. *-in-* > Pa. *i* (n), Pk. *-i* (n)- irregular declension.
19. *-iṣṭha-* > Pa. Pk. *-iṭṭha-*.
20. *-is-* > Pa. Pk. *-i* or irregular *-is* in morphology.
21. *-ī* remains unchanged.
22. *ika-* > Pa. *ika-*, Pk. *īa-*.
23. *-īyāms-* > Pa. *-iya* (s), *-eyya* (s)-, Pk. *-īyaṃsa-* or *īyaṃ-*.

24. *-u* remains unchanged.
25. *-uka-* > Pa. *-uka-*, Pk. *-ua-*.
26. *-us-* > Pa. Pk. *-u* or *-u (s)-* irregular in morphology.
27. *-ū* remains unchanged.
28. *-ūka-* > Pa. *-ūka-*, Pk. *-ūa-*.
29. *-ka-*: Pa. *-ka-*, Pk. *-ka-*, *-ga-*, *-ya-*, *-a-*.
30. *-ta-*: Pa. *-ta-*, Ph. *-a-* or *-ya-*.
31. *-tṛ-* or *-tar-*: Pa. *-tar-* and Pk. *-ar-* irregular.
32. *-tas-* > Pa. Pk. *-a (s)-* irregular.
33. *-ti-* > Pa. *-ti-*, Pk. *-i-*.
34. *-tu-* > Pa. *-tu-*, Pk. *-u-*.
35. *-tna-* > Pa. Pk. *-tla-*, Pa. *-tana-*, Pk. *-yaṇa-*.
36. *-tnu-* > Pa. Pk. *-ttu-* or Pa. *-tanu-*, Pk. *yaṇu-*.
37. *-tra-* > Pa. Pk. *-tta-* or *-ttha-*.
38. *-tri-* > Pa. Pk. *-tti-*.
39. *-tru-* > Pa. Pk. *-ttu-*.
40. *-tva-* > Pa. Pk. *-tta-*.
41. *-tha-* > Pa. *-tha-*, Pk. *-ha-* or *-tha-*.
42. *-thi-* > Pa. *-thi-*, Pk. *-(t)hi-*.
43. *-thu-* > Pa. *-thu-*, Pk. *(t)hu-*.
44. *-na-* > Pa. *-na-*, Pk. *-ṇa-*.
45. *-nas-* > Pa. *-na (s)-*, Pk. *-ṇa (s)-* irregular.
46. *-ni-* > Pa. *-ni-*, Pk. *-ṇi-*.
47. *-nu-* > Pa. *-nu-*, Pk. *-ṇu-*.
48. *-pa-* > Pa. *-pa-* Pk. *-va-*.
49. *-ma-* > remains unchanged.
50. *-man-* > Pa. *-ma' (n)-* irregular.
51. *-māna-* > Pa. *-māna-*, Pk. *-māṇa-*.
52. *-mi-* and *-mī* > Pa. *mī*, Pk. *mī*.
53. *-min-* > Pa. Pk. *-mi (n)-* irregular.
54. *-ya-* > Pa. *-ya-*, Pk. *-ja-* or *ya-*.
55. *-yu-* > Pa. *-yu-*, Pk. *-u-*.
56. *-ra-* remains unchanged.

57. *-ri-* remains unchanged.
58. *-ru-* remains unchanged.
59. *-la-* remains unchanged.
60. *-li-* and *-lu-* remain unchanged.
61. *-va-* remains unchanged.
62. *-van-* > Pa. Pk. *-va (n)-* irregular.
63. *-vana-*, *-vani-*, and *-vanu-* remain unchanged in Pāli
> *-vaṇa-*, *-vaṇi-* and *-vaṇu-*.
64. *-vara-* and *-vala-* remain unchanged.
65. *-vas-* > Pa. Pk. *-va (s)-* irregular.
66. *vāms-* >
67. *-vi-* > remains unchanged.
68. *-vit-* > Pa. Pk. *-vī-*.
69. *-sa-* remains unchanged.
70. *-sani-* > Pa. *-sani-*, Pk. *-saṇi-*.
71. *-sara-* remains unchanged.
72. *-sas-* > Pa. Pk. *sa (s)* irregular.
73. *-sna-* > Pa. Pk. *-nha-*
74. *-snu-* > Pa. Pk. *-nhu-*, Pk. *-ṇhu-*.

Secondary Suffixes :

1. *-a* remains unchanged.
2. *-ā* remains unchanged.
3. *-ānī* > Pa. *-ānī*, Pk. *āṇī*.
4. *-āyana-* > Pa. *āyana-*, Pk. *-āyaṇa-*.
5. *-āyī* > Pk. *āī*
6. *-āyya-* :
7. *-i* remains unchanged.
8. *-in-*, cf. 18 above.
9. *-ima-* remains unchanged.
10. *-iya-* remains unchanged.
11. *-ī* remains unchanged.
12. *-īna-* > Pa. *-īna-*, Pk. *-īṇa-*.

13. *-īya-* remains unchanged, or > *-iyya-*, *-ijja-*.
14. *-ena-* > Pa. *-enā-*, Pk. *-eṇa-*.
15. *-enya-* >
16. *-eya-* > Pa. Pk. *-eyya-*, *-ejja-*.
17. *-eyya-* > Pa. Pk. *-eyya-*, *-ejja-*.
18. *-ka-*, cf. 29 above.
19. *-ta-*, cf. 30 above.
20. *-tana-* > Pa. *tana-*, Pk. *-taṇa-*.
21. *-tama-* remains unchanged.
22. *-taya-* remains unchanged.
23. *-tara-* remains unchanged.
24. *-tavva-* > Pa. *-tabba-*, Pk. *-tavva-*, *-yavva-*.
25. *-tā* > Pa. *-tā*, Pk. *-yā*.
26. *-tāti* and *tāt* >
27. *-tya-* > Pa. Pk. *-cca-* or *-tiya-*.
28. *-tva-* > Pa. Pk. *-tta-*.
29. *-tva-tā* > Pk. *-tta- yā*.
30. *-tvana-* > Pa. *-ttana*, Pk. *-ttaṇa-*.
31. *-tha-* remains unchanged.
32. *-na-* > Pa. *-na-*, Pk. *-ṇa-*.
33. *-nī* > Pa. *-nī-*, Pk. *-ṇī-*.
34. *-bha-* > Pa. *-bha-*, Pk. *-(b) ha-*.
35. *-ma* : remains unchanged.
36. *-mant-* > Pa. Pk. *-mant(a)-*.
37. *-maya-* remain unchanged.
38. *-min-* > Pa. Pk. *-mi(n)-* irregular.
39. *-mna-* > Pa. Pk. *-nna-*, *-mma-*.
40. *-ya-* remains unchanged.
41. *-yin* > Pa. Pk. *-yi(n)-* irregular.
42. *-ra-*, cf. 56 above.
43. *-la-*, cf. 59 above.
44. *-va-*, cf. 61 above.
45. *-vat* >

46. *-van-* cf. 62 above.
47. *-vānt-* > Pa. Pk. *-vanta-*.
48. *-vaya-* >
49. *-vala-* remains unchanged.
50. *-vin-* > Pa. *-vi(n)-* irregular, Pk. *vī*
51. *-vya-* > Pa. *-bba-*, Pk. *-vva-*.
52. *-śa-* > Pa. Pk. *-sa-*,

The equivalents have been given on the assumption that these suffixes are attached to stems in vowels; naturally when the suffixes form nominal stems from bases ending in consonants there is bound to be a further change in them according to the type of consonant cluster they form part of.

We shall now turn to actually attested forms in Middle Indo-Aryan in order to understand the development of this subject as well as the problems which face an enquirer into their historical and geographical aspects. Unfortunately for us GEIGER does not treat this subject in his Grammar, except for some suffixes connected with verbal nouns. On the other hand PISCHEL gives some generalisations as follows: In addition to the suffixes which Sanskrit possesses, Prakrit has a number of Taddhita-suffixes which are absent in Sanskrit: *-āla-*, *ālu-*, *-illa-*, *-ulla-* in sense of *matuṣ*, *-ira* as a *kṛt*-suffix; *ttapa* < Vedic *-tvana-*, *-ḍa-* < Sk. *-ṭa-* etc. The treatment is indeed very scanty. We do not know which of the OIA suffixes are actually productive in the MIA stage, and which are merely inherited forms of OIA. Again it is necessary to find out where the new MIA suffixes came into existence and when and in what manner they have affected the growth of later Sanskrit.¹⁷ For instance while MIA preserves the Vedic *-tvana-* and in fact offers a more productive group than in Vedic itself, we also know that *-ālu-* considered by PISCHEL as MIA wanting in OIA is seen in late Sanskrit *trp-ālu-*, *sprhayālu-* etc. Is this a remnant of *-āru-* in its MIA setting as instanced by the *-i-*

treatment of *-r-* or a loan of MIA into later Sanskrit? For this is not impossible in view of the fact that MIA preserves a number of Vedic features lost in the classical stage of Sanskrit. The subject is replete with difficulties which only a close investigation of the existing material will unravel in stages. For Pāli and the literary Prakrits we have more or less a large body of literature in which a majority of the stem-forms in their different types are likely to occur, while the Inscriptional Prakrits, not excepting even the Aśokan inscriptions, are limited in their content, and thus cannot be expected to give us exhaustive information on this subject. Thus the study of nominal stem-formation within Indo-Aryan must take into account, as far as the recorded material enables us, the different verifiable suffixes, with complete quotations from literature, and where possible arranged chronologically within each group, showing the inter-relationship within each group and between group and group. This kind of investigation will show us the period of the productivity of each suffix. If in addition, the variants found in critically edited texts show on statistical evidence definite tendencies which can be correlated with the general history of the suffixes we are on fairly safe grounds to assume for the time being the geographical location with reference to the productivity of the type.

Nothing of this kind has been done yet, and it is not my intention to attempt this major problem within the time at my disposal or even within the limits of a single lecture. I have pointed out the problem itself and the way in which it should be approached at this juncture because it follows naturally from the discussion which I have initiated here.

Let us consider here a few typical cases from Pāli: from the base KAMA-TI we have: **kama-* n. and adj; *kama-na-*..

KAMP-: *kampa-*; *kampa-ka-*, *kampa-na-*, *kamp-in-*, *kamp-iya-*.

KAR-: *kata-* or *kaṭa-*, *kata-tta-*, *kat-ā-vin-*, *kara-*, *kara-ṇa-*, *kara-ṇiya-*, *karaṇiya-tā*, *kar-i(n)-*, °*kāra-*, *kāra-ka-*, *kār-i-kā*, *kāra-ṇa-*, *kāraṇ-ika-*, *kārāp-aṇa-*, *kārāp-ita-*, *kār-itā*, *kāri(n)-*, *kāriya-*.

CINT-: *cint-aka-*, *cint-ana-*, *cintana-ka-*, *cint-ā*, *cinti-ta-*, *cintin-*.

JAN-: *jana-na-*, *jan-tta-*, *jane-ttī*, *jan-tu-*, *jan-tta-*, *jana-*, *jana-ka-*, *jana-tā*, *jāta-*, *jāta-ka*, *jāta-tta-*, *jā-ti*, *jāti-kā-*, *jāti-mant-*,

JĀN-: *jān-a-*, *jāna-na-*, *jān-ana-ka-*, *jān-ana-tā*.

DIP-: *dīp-a-*, *dīp-a-ka-*, *dīp-ana-*, *dīp-ika*, *dīp-ita-*, *dīp-i-tar-*, *dīp-in-*.

PHAR-: *phar-aṇa-*, *pharaṇa-ka-*, *pharaṇa-tā*, *phar-ita-*.

MANN-: *maññ-anā*, *maññ-ita-*, *maññ-ita-tta-*, *ma-ta-*, *ma-ti-*, *mañ-mant-*,

HAR-: *har-a-*, *har-aṇa-*, *haraṇa-ka-*, *haraṇi*, *hata- <*ha-ta-*, *hā-ra-*, *hāra-ka-*, *hār-i-*, *hāri-ka-*, *hār-in-*, *hār-iya-* etc.

This list may be compared with the following taken from Prakrit: *ukkoḍ-a-*, °*ā*, °*iya-*, *-ī* all of which are Deśī words.

KAM- (Sk. *kram-*): *kam-anta-*, *kama-ṇijja-*, *kam-a-*, *kama-ṇa-*, *kama-ṇiyā*, *kamaṇ-illa-* *kama-ṇi*, *kan-ta-*, *kan-ti-*,

KAMP-: *kamp-a-*, *kampa-ṇa-*, *kamp-i-*, *kamp-ira-*, *kamp-illa-*, *kamp-anta-*, *kampa-māṇa-*.

KAR-: *kar-a-*, *kara-ṇa-*, *karaṇa-yā*, *kara-ṇijja-*, *karar-illa-*, *karāv-aṇa-*, *karāv-iya-*, *kar-i-*, *kar-iṇi*, *ka-ḍa-ka-ya-*, *kāra-*, *kāra-ga-*, *kāra-ṇa-*, *kāraṇ-ijja-*, *kāraṇ-iya-*, *kāra-ya-*, *kārav-aṇa-*, *kārav-iya-*, *kārav-aṇa-*, *kārav-aya-*, *kārav-iya-*, *kār-i-*, *kār-ima-*, *kār-iyā-*,

CINT-: *cint-a-*, *cinta-ga-*, *cinta-na-*, *cinta-nā*, *cinta-ṇiyā*, *cinta-ya-*, *cint-ā*, *cint-īya-*, *cint-ira-*, *cintāya-ga-*, *cintāva-ga-*, *cint-anta-*, *cinte-māṇa-*, *cinta-ṇīya-*, *cinti-yauva-* etc.

We may not exhaust the different types of suffixes in such selected lists, but we have at least some measure of the capacity of the different dialects in forming nominal stems. One of the most striking features of this short comparison is the capacity of MIA to extend its stems by addition of different suffixes, particularly the pleonastic *-ka-* of OIA. Thus the fem. corresponding to *cintaṇa-* is either the regular *cintaṇā* or the extended form *cintaṇiyā*. At the same time one is struck by the rather small number of derivatives from any given base. For the sake of comparison I quote below for corresponding bases from WHITNEY'S *Roots*, to which can be added a considerable number of other derivatives since found recorded in literature:

KAMP-: *kamṣa* e, *-°kampā* e, *°-kampaka-* e, *kampin-*, *kampya-*, *kamṣana-*, *kamṣanā*, all e, *°-kamṣanīya* c., *kampra-* s; *kaṣana* ? RV., *kapi-* v, *kēpi* ? RV.

KRAM-: *krāma* v-, *-kramin* e-, *kramya-*, c.; *krāmaṇa-* v-; *-kramaṇīya-* e; *kramitavya-* e: *-krāma* b: *-kramin* av. b.; *-krāmya* c.; *-krāmaṇa* c.: *-krāmuka-* b.; *-krānti* b-; *-krāntr* e; *caṅkrama* av-; *caṅkramaṇa* s-; *krāmayitavya* c.

KR-: *kard* v-, *karaṇa-* rv. *kāraṇa* v; *karaṇīya* b-, *-karaṇi* ? b, *kāras* rv, *kāriṣṭha* rv; *-kariṣṇu* s-, *karūna* v.b.; *kārtva* v, *kartavyā* b, *kārtr* rv, *kartṛ* v-, *kārtra* av, *kārman* v-, *kārvara* v, *-kāra* v-, *kāraka* e-, *kārin* av-, *kāryā* av, *kāraṇa* s-, *-karaṇīya* c, *kāru* e-, *kāruka* b-, *-kūrmi* (n) rv, *-kṛt* v-, *-kṛtya-* v-, *kṛtyā* v-, *kṛti* v-, *gṛtu* (vas) v-, *kṛtva* rv, *kṛtnū* v, *kṛtrima* v-, *kṛtvan* v, *kṛtvā* av, *-kṛtha* rv, *-kra* rv. *krātu* v-, *kriyā* kes, e-, *cākri* rv, *-karikra* b, *cikīrṣ* c, *cikīrṣā*

e-, *cikīrṣu* e-, *kārayitṛ* b, e, *kārayitavya* e-, *cikārayiṣu* c, *-ciṣkārayiṣu* e.

Now a consideration of this series shows us that several suffixes have different aspects so far as the division of OIA into the six stages of WHITNEY is concerned. Thus while the suffix *-u* seems to be used in the classical and epic periods, in *kāru-*, *kāruka-* with the suffix *-u-ka-* is current from the Brāhmaṇa period downwards. But this is only an isolated case. We shall have to take into account these suffixes in their ensemble and then bring the light of history to bear upon them in their totality. The feature noted above corresponds to the form *cintāṇiyā* with the *ka-* extension.

From this comparison we find that gradually the variety of suffixes is becoming less and less; the number of stem forms from a given base is much less in MIA than in OIA. Phonology of course is responsible for some reduction in this variety, but not to all the reduction we see. A comparative study of this important branch alone will throw light on the interesting history of Indo-Aryan in its two stages of Old and Middle Indo-Aryan. A systematic study is what is required, and I hope I have shown sufficiently the need of this investigation in relation to both the period of time and the locality.

LECTURE V

PROBLEMS OF HISTORICAL LINGUISTICS

IN the introductory lecture I have referred to the continuity in the history of Indo-Aryan languages, running almost to three thousand five hundred years and odd. During this long period of time the earliest representative of Old Indo-Aryan, coming into contact as it did with the primitive Indian languages of the period representing different alien cultures and through its own natural evolution developed certain features which, in course of time, gave rise to Middle and Modern Indo-Aryan. Up to about 300 B.C. there was definite Iranian contact in the North-West, though Indo-Aryan had developed its special features as distinct from Indo-Iranian, but since this period Indo-Aryan developed in its own independent manner. The history of Indo-Aryan cannot be divorced from the political history of India from the earliest period. For the contacts which the Aryans made with the earlier inhabitants of the countries conquered by them necessitated not only an understanding of their indigenous cultures, but due to the ingrained genius of the Aryans themselves to assimilate other culture-patterns to their own lines of development in essence, made a large all-encompassing synthesis imperative. To unravel this problem so far as linguistics is concerned is to discover and separate the sub-strata which are at the basis of Indo-Aryan vocabulary and linguistic changes. That is a question which is beyond the specific purpose of these lectures. Such contacts as I have mentioned here can be assumed on the basis of several proper names which occur for instance in Vedic literature.¹ The changes are such as would affect a language which is being learnt by people whose ordinary intercourse is in a different medium. In vocabulary a large number of words indicating articles of daily use, vegetables, medicines etc. that is, items of local flora and fauna, and sometimes, to-

ponomy show a distinct non-Aryan character. I need only refer here to the brilliant studies in Pre-Aryan and Pre-Dravidian initiated by Sylvain LEVI³ and carried further by Jean PRZYLUSSI⁴ and others.⁴

We are naturally concerned here primarily with the verbal bases, so I do not propose to enter into the discussions connecting isolated non-Aryan bases with cognate elements in Austro-Asiatic, etc. which forms the mainstay of the discussions in this particular field.

First with reference to phonological changes. Whatever be the original movement which initiates the simplificatory process in the matter of pronunciation, and thus affects the phonology of a language in its historical evolution, whether we term it phonetic decay or phonetic development, there can be no doubt as to its existence. Efforts to isolate definite types of changes and attribute them to a given period and locality have not so far succeeded, for the simple reason that the unity of culture within Hindu India from the OIA stage to the NIA stage, has made interborrowing easy of accomplishment, to the increasing discomfiture of linguisticians. The binding element of unification has naturally been Sanskrit, and in its catholic sympathies it has imbibed within itself elements from these neighbouring domains without actually destroying the vernacular of the people. Thus in any discussion of a linguistic problem connected with Indo-Aryan it is of the prime importance to know the exact nature of the Sanskrit vocable, whether it is derived from the ancient period, whether it is a loan from a cognate MIA or IE dialect, or a novel incorporation from a non-Aryan language. Once this question is settled, its geographical location is more or less confined within narrow limits. Considerations of morphology and etymology will then fix for us the exact region wherein such changes have taken place.

The difficulties of this approach are, however, greater the farther we go back into the history of Indo-Aryan.

As an illustration we may take the case of the cerebral-system of Sanskrit. In no IE language of that period were cerebrals known, and PIE as well as Indo-Iranian did not possess the cerebral series. Still it is quite well developed in Sanskrit. But the dental and cerebral series exist also in Dravidian, and the cerebrals occur also in another Indian family, the Kol or Munda. How has this series entered into the OIA sound system? Is it borrowed from the Dravidian or the Munda or partially from each? One fact should be noted here before this question is attacked; cerebrals have not been introduced wholesale in Sanskrit: on the other hand their extension is rather progressive. In the first place cerebrals result from dentals and palatals under certain conditions depending on changes anterior to Sanskrit itself: so the action of either Dravidian or Munda substratum is subordinate to the action of the Indo-Aryan, and as BLOCH remarks,⁵ has only helped to hasten and fix the results of an evolution anterior to the contact of both languages. But when the cerebrals occur in words whose etymology is not clearly demonstrable as Indo-Aryan they are reasonably suspect as loans from either the Munda or Dravidian families; there is however one difficulty admitted by BLOCH,⁶ namely that etymologies are either self-evident or else a matter of probability, and to a certain extent of faith. In the absence of detailed knowledge of both families it is hazardous to connect Indo-Aryan with Dravidian or Munda unless the etymologies suggested are of the first kind.

BLOCH connects the OIA base *taḍ-* quoted in the Nirukta and found in Pāli, meaning 'strike' and the cognate semantic groups *tāḍa* 'a stroke', *tāla-*, etc, with Kan. Ta. Te. *taṭṭu* 'to tap, strike', Kan. *tāṭu* 'strike against', Ta. *taḷumbu* 'wound'.⁷ The root is found in *taṇḍulāḥ* 'husked rice, threshed grains' just

as in Gondi *kurmi* 'the harder part of rice which remains after grinding' we have *kurum-* 'to grind or pound grain'. Now BLOCH believes that of this Sk. *laḍ-* there is no good Aryan etymology, whence it follows that it may be a borrowed base from Dravidian which offers many cognates.⁹ I have already referred to this base earlier and connected it with OIA *trd-* 'to split' of which it is the MIA form with the expected cerebralization following the vocalic *r*. Which of these explanations can we expect to satisfy the existing conditions? It is well-known and admitted by Prof. BLOCH himself that this cerebralisation explains a fairly large number of OIA vocables found even in the Vedic literature; some of these instances may have cognate forms in Dravidian; what are the criteria to determine whether the forms under discussion are explicable by good Aryan etymology or by loan from the Dravidian? We have seen both types in OIA and MIA, and the difficulty is particularly with vocables which show besides a possible good Aryan etymology. This field is very rich for the investigators, but they should exercise the care and precision which the needs of the science demand.

Another example cited by M. BLOCH is OIA *atati*¹⁰ which is Aryan as determined by the equation *atithih-* Zd. *astiš*: epic Sanskrit has on the other hand *aṭati* with the cerebral-*ṭ-* which KITTEL explains by Kan. *āṭu*; BLOCH, disagreeing with him, suggests the Dravidian forms for 'heel': Ta. Kan. *aḍi*, Te. *aḍugu* 'foot, foot-step' which Mr. K. Amrit Row already connected with Pj. *aḍḍi*, Guj. H. *eḍi* (cf. H. *aḍḍā* 'heel of a shoe'),¹¹ to which could be added names of the 'sole', Ta. *aṭṭei*, Kan. Te. *aṭṭā-* and which, according to BLOCH, could have furnished the pattern after which *atati* being modelled could also be preserved. In the earlier lectures I had occasion to point out that the cerebralization in *aṭati*: *atati* is to be attributed to OIA *ṛt-a-ti* 'pursues' whence we have the base *t-*

also in the sense of 'wander'.¹¹ When these forms are considered in their ensemble we are led to the position of attributing them to PMIA forms finding their place in OIA vocabulary, unless scholars connect each of these separately with loan-words from Dravidian. Here then is a nice problem which offers a vast field of inquiry and which is interesting not only from the phonological aspect but also from the semantic point of view, as suggested above in the explanation given by BLOCH, where the idea of 'wandering' is connected with the words meaning either 'heel' or 'sole'. The acceptance of these etymologies is largely a matter of faith or conviction.

A third example of this type is Mhh. and Pāli *maṇḍayati* 'decorates' which BLOCH not improbably connects with Kan. *māḍu* 'do', Ta. *maṇ-* 'to decorate, polish', Ku. *mējh* 'to adorn', Ta. *māḍam*, Tc. *māḷige* 'house'. I have on the other hand compared OIA *maṇḍati* 'decks' with OIA *māṇḍati* 'is exhilarated' and the bases *mṛḍ-* 'be gracious', *mṛḍ-* 'rubs, polishes' to pose PIA **mṛḍ: mṛnd-* to explain the entire group. While the comparison of M. BLOCH points out to a Dravidian bias, my hypothesis is essentially one on the Aryan inheritance of these vocables. Unless more delicate tests are available it is difficult to isolate vocables due to the inner development of Indo-Aryan, probably under the stress of Dravidian and Munda influence, and those which may be considered as loans adopted within the Aryan fold.¹²

Another method adopted to ensure that the facts of Dravidian loans or even Munda (i.e. Austro-Asiatic) loans in Indo-Aryan is not to consider the single vocables of IA, suspect to be loans or not easily analysable within the IA field, but to take groups of words illustrating some technique of doing things such as grinding corn or making bricks, and compare the whole groups of words with their corresponding terms in the two other families of languages mentioned. If this analysis brings out the fact

that the related words belong to one of these families originally then it is possible to accept the loan-word theory as applied to this group of vocables. Naturally this test can only be sparingly applied, since the different techniques are limited in number. But still it is a more delicate test than has been applied hitherto to single words; its significance is not merely linguistic but cultural as well: for instance the terms used in the technique of coru- or grain-grinding in IA show, according to M. BLOCH,¹⁸ unmistakeable signs of borrowing from the Dravidian; it would therefore follow that the art of threshing rice was Dravidian and borrowed by the Aryans from the Dravidian. Similarly M. Jean PRZYLUŚKI¹⁹ has attempted to analyse the word for 'brick' in Indo-Aryan and come to the conclusion that the art of brick-making was non-Aryan, in spite of the fact that bricks are known both to the R̥gveda and the Avesta.

Turning to the Middle Indo-Aryan field, BLOCH connects the base *bol-* of Divyāvadāna and *bolla-* of the Prakrits, not with Sk. *brū-* as normally expected, but with Ta. *vaguḷi* 'noise, sound', Kan. *baguḷu*, *bogaḷu* 'to cry', and perhaps Kan. *bobbe*, Te. *bobba* 'cry' which we have in Mar. *bob*, etc.¹⁸ But Pk. *bolla-* with Mar. *bol-ṇē* with the *-l-* regularly speaks for an *-alla-* extension of OIA *brū*. The other examples cited by Prof. BLOCH show that the Dravidian influence, if it existed, did not confine itself to OIA but also to MIA and that therefore the Aryan-Dravidian problem becomes even more essential and fascinating. I have only one warning to add here: the comparisons when instituted should not be purely fanciful, but must be made with the solid backing of modern scientific methods.

Three factors are essential for proving such connection: (1) it should be easily demonstrable that the Indo-Aryan vocabulary considered is inherently non-Aryan in its characteristic, or at least not easily fitting into the genius of the IA. (2) The

cognates in Dravidian and Munda are not mere fortuitous examples but pure Dravidian or Munda elements. For this purpose the scientific study of both these families is absolutely essential; for while the literary Dravidian languages have reached a very high level of cultural excellence, the non-literary languages and the Austro-Asiatic dialects are primitive in their cultural aspect, and therefore while borrowing between the cultivated Aryo-Dravidian group is fairly possible, the loans from outside this field will be severely restricted either to names of plants, articles of daily use or technical terms for arts learnt by the Aryans from these earlier people of India. In all cases it should be possible to establish on absolutely scientific lines what are inherently the Dravidian or Munda characteristics so as to enable scholars to believe in the original nature of the vocables concerned. The first efforts therefore, in the absence of scientific comparative grammars of these two families, should be not to attribute the influence of these on Indo-Aryan in the suspected cases, but to give only the cognate forms from within these families. The second attempt will come through a detailed comparative study of the two families when the essentially Dravidian or Munda element will become separated from the non-Dravidian or non-Munda, and identification of the real nature of the words concerned will become apparent. (3) The study of IA loans within the Dravidian and Munda fields is as essential a part of this study as the previous two. For borrowing is a mutual art; and the recognized superiority in vigour of the Aryan civilization¹⁶ has made borrowing from Indo-Aryan an equally essential part of the intercourse between the Aryans and the non-Aryans.¹⁷ With these three aspects of linguistics brought out to a high level of efficiency, the interesting and fascinating subject of the inter-relationship between the Dravidian and Aryan, Munda and Aryan, and Dravidian-Munda will be laid bare.

In the study of MIA and NIA we shall have to take into

account also the Tiheto-Burman family of languages ; for there are a large number of loan-words from these languages in the Kharoṣṭhi Documents of Niya in Khotan. But we are not directly concerned with these problems here.

Turning from the question of cerebralization which is always bound to exercise the minds of comparative linguists, we are faced with one main difficulty in the phonology of vowels. Despite the wonderful phonetic system of the Sanskrit alphabet, we are faced with a great difficulty both in the Brāhmī and Kharoṣṭhi scripts about recognition of long vowels followed by single consonants as to their true phonetic value. We have for instance forms in MIA like *dīgha-*, *dīha-*, *lākhā*, etc. from OIA *dirgha-*, *lākṣā* ; as they stand we have to assume that the simplification of double consonants took place as early as early MIA. Do these forms correspond then to PMIA **dīggha-*, **lākkhā-* or to the regular MIA forms *diggha-*, *lakkhā* ? If the first hypothesis holds good, and I am personally inclined to accept it, the simplification by itself leaves the quality of the vowel as well as its quantity unchanged, and we have only to explain the early simplification of double consonants ; if the second hypothesis is accepted we have not only to explain the early reduction of the double consonants but also the compensatory lengthening which is characteristic of only New IA. On the first assumption then we have actual cases in primitive MIA of a long vowel followed by the geminated stops resulting from assimilation ; on the one hand, under conditions which have yet to be determined, we have simplification at a rather early period of the double consonant, leaving the quantity of the vowel unchanged. If we come to the problem of New Indo-Aryan linguistics we notice that, in general, Sindhi preserves the original length of the initial OIA syllable in its vowel part, while Panjabi preserves it in the consonantal part.¹⁸ Now this can only be explained on the basis that the primitive

MIA in this contiguous area possessed long vowels followed by doubled consonants resulting from assimilation, and that the simplification of the long vowel preserving the double consonant took place within the area where modern Panjabi developed, while in the area where Sindhi developed the long vowel remained unchanged with gradual simplification of the double consonants; in the other regions, the doubled consonant remained at the expense of the vowel quantity, and later when MIA assumed its NIA aspect, a further change took place, reducing the double consonant and compensating the loss by lengthening of the vowel. It is a problem for future research to establish these facts on the basis of extensive investigations; while the general development is known, it is necessary to fix the period as well as venue of these changes, and link them up in a historical as well as regional survey of Indian linguistics.

The urgency of this problem may be gauged by the recent work published in Europe on certain Sanskrit etymologies. I shall take as an illustration Paul THIEME's interesting paper on the etymology of Sk. *pūjayati*, *pūjā*¹⁸ cf. ZDMG 93, 105-123 (Indische Wörter und Sitte). Starting on the relationship semantically between the *yajña*-ceremony of the Vedic times and the elaborate *pūjā* of the Purāṇas and Tantras, THIEME contradicts CHARPENTIER's etymology as Dravidian loanword connected with the base *pūcu*, *pūsu*- found in Tamil and Kanarese. In an elaborate manner he cites examples of *pūjā* and the verb *pūjayati* from different types of literature and the parallel forms of other roots substituted for it in similar contexts in order to fix its meaning. Through all this mass of presentation, as against the non-Aryan origin suggested by CHARPENTIER, THIEME arrives at the conclusion that *pūjā* and *parka*- are semantically and perhaps etymologically also, related. Now *parka*- is derived from the base *prc*- 'mix' which gives in RV the present *prīṅkti* *prīcati*. In AV we get the thematized base

in **pr̥ncati*, cf. imp. *pr̥ncā*, and pres. part. *pr̥ncanī*. Now on the analogy of the periphrastic forms *janayām akar*, *vidām kurvanti*, *bibhayām cakāra*, etc., he builds a form like **pr̥ncam akar*, **pr̥ncām karoti*, **pr̥ncam cakre*, *cakāra*, etc. From a **pr̥ncām* we can have popular intermediary forms like **puñcām*, **puñjām*, **pujjām* > *pūjām*; whence *pūjām kṛ-* > *pūjaya-*. A formal analogy to this is given by *cintayati* from *cintām kṛ-*; just as **pr̥ncām kṛ-* < *pr̥ncati*, so also *cintām kṛ-* < **cintati*, which can be assumed on the strength of Av. *cinat-* (found in the conjunctive *cinaθ āmaide*, with false θ for t); again **cintati*: Av. *cinat* :: Ved. *vindati*: Av. *vinad-*.

So much for THIEME's ingenious suggestion; now what are the MIA intermediary steps which he proposes? From a **pr̥ncām* he assumes first a form **puñcām*, with reduction of \check{r} to u under the influence of the labial $p-$: this change is quite understandable as it is paralleled by the a and i treatments in the R̥gveda itself, while the form *pūjayati* is attested since the Sūtra period. The second step proposed by him is a change from **puñcam* to **puñjām*, or a voicing of a hard consonant after a nasal; from what we know of the comparative grammar of Indo-Aryan in its various stages, this change is characteristic of the North-West of India, and is not to be found as a regular occurrence in any other Aryan region. The third step is the denasalization of the vowel giving in its place the double consonant $-jj-$ in **pujjām* which is then assumed to give *pūjām* by a reduction of this $-jj-$ with compensatory lengthening. Viewed in itself the etymology appears possible, but if we enter into its various stages the improbability of THIEME's suggestion becomes at once apparent. The change of \check{r} to u is admissible, while the voicing of the mute after a nasal in **puñjām* makes it a NW form. The further reduction by denasalisation is something quite foreign to Indo-Aryan, and makes the form reasonably suspect. The last step of reduction of the double consonant

with compensatory lengthening appears rather early for the Sūtra period since when the forms *pūjā* and *pūjayati* have become current. Yet the assemblage of passages which THIEME has been at pains to collect demonstrates that there is some inberent connection between the different words on the basis of which he suggests this etymology.

It is precisely for this reason that we have to be careful in every step we take in tracing the etymology of these words; the period since when the form becomes current is as important as the other factors, and each step must satisfy the conditions of time and space for which we pose the intermediary forms. Etymology on modern scientific lines, where the comparative study of languages has progressed a good deal, is not merely the posing of certain starred intermediary forms, but the certainty with which such intermediary forms can satisfy all the rigid conditions imposed upon them by our knowledge of the general development in its space-time context. I have taken the trouble to point out each step in the above etymology in order to demonstrate to you how even the most apparent etymologies which seem at first sight to satisfy our ordinary demands need detailed investigation before we accept them or reject them. This is a warning to scholars who take delight in fanciful etymologising by posing impossible intermediary steps as viewed in its time-space context.

We have seen in the case of the nominal suffixes that one of them *-ka-* is preserved in MIA as *-ga-*, or in the reduced form *-ya-*. Now the reduction of the single intervocalic stop is a well-known feature of the Prakrits; it is preserved in Pāli and in Aśokan Inscriptions, but reduced in various degrees elsewhere as in *cāudasa-* with loss of *-t-* while the *-d-* in **-dasa-* remains, probably on the strength of its being an independent word. In Amg. it remains either as a voiced consonant or is lost altogether; the dentals remain voiced in Śaurasenī and Māgadhī

while the gutturals, palatals and labials are reduced to zero; the cerebrals remain throughout, unchanged in the earliest stage of MIA, but voiced in the later stage. In the case of aspirates the aspiration alone remains with loss of occlusion. Now Suniti Kumar CHATTERJI, in discussing these changes in his *Origin and development of Bengali*,²⁰ assumes the following steps in the change of a single intervocalic stop: Unvoiced stop > voiced stop > spirant > complete loss of occlusion. Do we find all these stages attested in the history of any single member of this important group? Of the pure spirant sounds the only attested evidence comes from the language of the Kharoṣṭhi Documents found in Chinese Turkestan. Here intervocalic *k*, *c*, *t*, *ṭ*, *p*, *ś* and probably *ṣ* became at first voiced, and *k*, *c*, *t*, *p* as also *g*, *j*, *ḍ*, *b*, further became spirants *gʰ*, *ś*, (*ṣʰ*), *ḍʰ*, *ḃ*. The suffix *-ag'a* (Sk. *-aka-*) tends to become *-ae*, especially in the past passive participle; *ditae* < *ditag'a* and the suffix *-ika* > *-i* (< **ia*). Thus all the stages indicated in the simplification of the single intervocalic stops is illustrated in this Nīya Prakrit.

The problem of historical linguistics is to separate each of these stages at least in its time context; for sound changes must occur uniformly when there is no such disturbing factor as borrowing from a cognate dialect. The main difficulty therefore is not so much a division into time context as the space context, to separate from the dialect of a given locality elements which it has borrowed from others.

In the Aśokan Inscriptions, as we have seen, the intervocalic single consonants are preserved; the few exceptions are only indications of the forces actually at work on the different dialects represented therein. I may summarise here a few results of a full analysis carried out by my pupil Mr. M. A. MEHENDALE.²¹

historical character. Is the devoicing due to contact with foreigners who did not possess voiced stops? In what way does the speech-habit of a foreigner affect his assimilation of the new language, and to what extent is a certain feature in this language due to this outside influence? This is a problem which needs working out backwards, by the study of speeches now current in the different parts of the world, and particularly of the colonial imperial languages which have been implanted in foreign soil as a result of economical and political conquest. What is true of these types holds good for these Aryan languages which went out on a religious mission, divorced from the material politico-economic gain; just as the modern colonial imperial languages became the instruments of modern culture, mainly materialistic, so also the Aryan dialects, whether Prakritic or Sanskritic in their nature, went out to conquer new territory in the spiritual domain, and it is the function of the historical linguist to separate the main lines of change which affected them in this activity.

There are a number of other phonological difficulties which ought to be solved by future research; some of them at least occur in THIEME's paper to which I referred while discussing the etymology of *pūjayati*. He connects Sk. *maṇḍate* with the form *mṛñjata* occurring in the Rgveda < **mṛñje*, **mṛikṣe*, **mṛinṣte*; this last form gives, according to THIEME, a form **maṇḍe* by the MIA change *-inṣt-* > *-ṇḍ-*, which can then give us the present *maṇḍate* in the same manner as *ūhé* gives *ū'hate*, since these forms **maṇḍe*, *ūhé* or **sevé* can only be explained by the present forms *maṇḍate*, *ū'hate*, *sévate*, etc. With great facility THIEME points out to GEIGER *Pāli Literatur und Sprache*, § 58, for the development *daṁṣṭrā* > Pa. *dāṭhā*, *daṭṭhā*, which he explains as from PMIA **daṁṭṭhā* where the loss of the nasal would be compensated by the lengthening of the vowel. As intermediary groups he posits *-inṣt-* > **-inṭ-* :

-ṇt- (-ṇth-) > -ṇḍ- according to GEIGER section 61. The voicing of unvoiced stops after a nasal is once more a NW characteristic, and GEIGER's examples refer to OIA *nighaṇṭu-*, *grantha-*, *hanta-*. That is to say, the forms are already there for this particular tendency which must have originated during the Sūtra period, for it is absent in the Saṃhitā and Brāhmaṇa periods, and we do not have to take into account intermediary forms. Does the author then seriously imply that the word was first formed in the NW on the analogy suggested by him and then accepted in the entire Sanskrit literature? If so we need the proofs. Moreover the type selected is rather unfortunate: for we find in MIA the so far unexplained forms Pāli *dāṭhā-* with the reduction of -tth- from *daṭṭhā*, also found in the language, and Pk. *dāḍhiā*, M. *dāḍhikā*, with early reduction of the double -ttha- with loss of nasalisation and compensatory lengthening in Pāli and voicing in Pk. and M. Instead of quoting GEIGER, THIEME should have paralleled the form *maṇḍ-* < *maṇṭ-* with the Sk. lex. *ciraṇṭhī* with the *Kathāsarit-sāgara* form *ciraṇḍhī* which brings out the true NW characteristic of this change. To expect the simplification so early is beyond the results proved by comparative linguistics of the family, and yet we actually find the forms in the *Milindaapañha* so far as the Pāli dialect is concerned, while the parallel *daṃṣṭrikā* is quoted only in a lexicon. Can we expect these forms to be really Aryan in character? In any event it is incumbent upon the prover of such etymologies to prove every step in this process in its space-time context. If *maṇḍate* occurs in literature at a period anterior to the development of the NW tendency of voicing unvoiced stops after nasals, then THIEME's demonstration falls to the ground. I have not minced my words in criticising this attitude, because it is so largely shared by eminent scholars in the line, who quote authorities for each step indicated by them without considering whether the changes supported

by them are the natural changes to be expected or merely the sporadic changes noted down by these earlier authorities. Of the space-time context they have little notion. If Indian linguistics is to progress scientifically to its destined goal, and India is once more to take its natural lead in this science as the birth-place of Pāṇini and Patañjali, this aspect must be rigidly kept before every investigator. And it is solely with this objective that I have time and again referred to it in these lectures. The approach is still young, and the material to be assimilated to this pattern unlimited; hence the scope for investigation is boundless.

Not satisfied with giving us the equation **mr̥ṣṭa* to **maṇḍa* discussed above, THIEME parallels it by the form **p̥r̥ṣṭa* : *p̥ṇḍa* - related to the root *p̥ś-* 'adorn', and the examples quoted by him from the *Mahābhāṣya* and other works largely bear out his contention. That is the main difficulty of our subject : partial application but not in all its aspects. On the same analogy **mr̥ṣṭa* is assumed to give OIA. *muṇḍa*-, 'the shaven' and the kitchen term *maṇḍa* as in the expression *surāmaṇḍa*-. Continuing the rime-word formation between *pāṇḍu* : *pāṇḍurā*, *kharjura* ; *kharjūra*-, *maṇḍūra*- whence an assumed **pāṇḍūra*-, he posits a possible connection between these two forms, through dissimilation as follows : *m*- and nasal > *p*- and nasal as OIA. *tasmin* ; MIA. *taspin*, **puśman* > *puṣpa*-, quoting Helmer SMITH's authority. But the point is that this change of *-m-* > *-p-* occurs only in the medial position when the *m* is combined with *s*, and not at all in the initial position where *m*- has regularly remained in all stages of Indo-Aryan. Leaving this fact aside THIEME again connects the form *pāṇḍu* with an assumed **māṇḍu*, and this parallelism enables him to explain OIA *pāṇḍita*- as equal to OIA *maṇḍita*- 'a shaveling'. You will see for yourself how unscientific this process is, trying to explain the intermediate forms assumed on

analogies which probably do not apply to the conditions or the time and locality of the change, and applied by scholars who have every right to be held in esteem by us. It is now clear that we do not have to wonder that linguistics has not made much progress in India when its so-called scientific exponents follow these methods. The fault is not entirely theirs; it is inherent within the Indo-Aryan domain itself, for we have no historical lexicons of the dialects or linguistic lines, and the history of literature as that of the texts themselves is still an unsolved problem of Indology which is just making headway through the continuous, if somewhat uncoordinated, efforts of individual scholars.

I have myself offered a few suggestions on the possible etymologies of some of these words; I shall try to explain the word *paṇḍa*²⁸ in another way strictly within the limits of Indo-Aryan development: we have in OIA the root *pr-*, which with its stem-form, has given rise to another related OIA base *prñ-* mentioned already in the second lecture; both these bases mean 'to fill'; the past passive participle of the first is *pūrṇa-*, and we can assume for the second the normally expected *-tā* form: **prñ-tā* > **prñ-dā-* (cf. *dah-tā* > **dagh-dā* > *dag-dha-*) which can regularly give us the form *piṇḍa-* in the sense 'being filled in, formed in'. The change of accent is probably due to substantivisation of the participle, as suggested by THIEME. The only difference between my etymology and THIEME's is that his intermediary forms need a lot of explanation at a period when the changes suggested therein had not become marked out at all, while there is no such difficulty in my suggestion; the changes assumed have parallels right from the R̥gvedic period; but I would not like to accept it all the same unless you satisfy yourselves of the different implications involved in each step in its space-time context.

Parallels for such a type are already given by THIEME in

his paper, in *tunḍa-* < **truda-* from the base *trd-* in *trṇatti*, *trutte*.

As I have not dealt with the question of morphology of the verbal bases which I discussed in the second and third of these lectures, I cannot enter into a great deal of the problems of historical linguistics which arise in this domain. The main lines of development are more or less clear; but the general problem here is to take account of the rate of development in each region and its repercussions on the development in neighbouring regions; in fact an unveiling of the development in its individual movement. In linguistics it is a general principle that the changes in morphology are somewhat slower than those in phonology, unless there is a wholesale attempt by foreigners to incorporate the new language to their needs in which case the morphology will also to a great extent undergo rapid change. From the very nature of Indo-Aryan development we can assume that the Aryans with their superior vigour mixed with the earlier inhabitants of India, incorporating them slowly within the Aryan superstructure, making concessions in minor things while preserving the essential Aryan genius,* and that this incorporation introduced rapid changes within the linguistic structure, or else increased the pace of a change which was already there in the making.

One of the problems in this field is offered by the Nīya Prakrit; preserving as it does some of the oldest characteristics in Phonology, there are forms therein which correspond exactly to the modern Indo-Aryan forms. For instance there is no distinction between the nominative and accusative—a feature common to Apabhramśa and the NIA direct case; the neuter is lost. Among other late tendencies BURROW enumerates the following: transferring of all nominal stems to the *-a-* type, extension of *-ī* as the general termination of the feminine forms, use of Locative instead of Accusative with verbs of movement,

etc. Particularly striking is the formation of a new active past tense from the past passive participle; this is a feature which has not even developed in Apabhraṃśa, much less in other MIA dialects, but is common to the modern Indo-Aryan languages. The tense is as follows: from the past passive participle *dita* we get

<i>ditemi</i>	<i>dita-ma</i>
<i>ditesi</i>	<i>ditetha</i>
<i>dita</i>	<i>ditaniti</i>

The origin of the form is attributed to forms like *gato smi*, actually preserved in *prihitosmi* 'I am pleased', *gatosmi*, etc. From this the whole paradigm is built up. This formation is quite familiar in the modern Indo-Aryan languages. Originally in OIA the past passive participle could be construed as a perfect active participle by adding the secondary suffix *-vant*: *tāt kṛtā-vān* 'having done that', *taṁ nigīṛṇa-vān* 'having swallowed him down'. Derivative words like this are found in the R̥gveda, but without the participial sense; in the Atharvaveda there is a single example with participial meaning: *āsitavaty ātithau* 'one's guest having eaten'; in the Brāhmaṇas also it is hardly met with. But in the later language however it becomes more common, and used predicatively with or without the copula, as a personal verb form in the past tense; it expresses there both the true 'perfect' value as well as indefinite past time. Although originally made from transitive verbs, the usage applied later to intransitive verbs also. In MIA the suffix *-vant* has the more popular forms in *-illa-*, *-alla*, *-ulla*, from which forms the Bihari and Bengali past is built. Similarly the unextended past passive participle gives us other past forms in the modern IA vernaculars. The difference between the OIA and NIA formation lies in the fact that the passive is made active in the OIA stage by the secondary suffix *-vant* while in the NIA the personal endings added to the participial form gives the active past.

The question naturally arises : how can a change which is not witnessed even in the Apabhrāmśa stage affect a Prakrit language attested as early as the 3rd century A.D. ? Is the contact of the people native to Shah-Shan responsible for this ? BURROW thinks not, because with them it was a stereotyped official language, whereas the phenomenon observed are those of normal linguistic change, changes which are actually found to occur later in the rest of the Indo-Aryan field. How have these tendencies to evolution developed so unusually early in the home of this Niya Prakrit ? Are they due to foreign invasion or influence ? Could these forms not have been more general in India, but obscured by the conservative tendencies of the literary Prakrits ? This is the question that BURROW asks us.²⁴ The last suggestion cannot be accepted, for uncultivated languages are often more conservative than the literary type, and moreover we cannot expect that so large an interval should exist between the incorporation of this particular tense in the NIA without leaving even the slightest trace in early Apabhrāmśa. We may on the other hand assume with reason that the incipient tendencies current in Middle Indian as well as Iranian received a particularly favourable ground for rapid development in the frontier region, where other linguistic groups also made this development possible ; for we notice that the Niya Prakrit evolved in India was subjected to two kinds of foreign influence (i) Iranian and (ii) the native language of Kroraina which shows a strong affinity with Tocharian (Agnean and Kuchean) and was thus in an eminently favourable position to develop these tendencies so early. But this is pure assumption on our part, needing detailed investigation of the border languages.

This point brings me to the consideration of a delicate linguistic problem which alone can help us in our understanding of historical linguistics in its true perspective. There is no doubt that India has seen many political and economic invasions, but

the ancient divisions seem to have preserved themselves intact, and as pointed out by Dr. CHATTERJI,²⁴ still continue their linguistic evolution in a fairly independent manner. Thus we shall have borders between each IA region, and between IA and Dravidian, IA and Muond and Munda and Dravidian. Since detailed observations are not available during the ancient or medieval period, we shall have to work backwards on the sound foundation of modern scientific observation. For the problem of morphological innovations in the Niyā Prakrit is only a more ancient phenomenon of what is actually happening in our days. The difference will be only in the degree of rapidity of the change, the conservations which are not conscious archaisms, but which are kept up because the general tendency to growth in the natural evolutionary process is prevented by isolation within other linguistic groups. I should really refer to this point in my next lecture under desiderata, but I have mentioned it here as it follows naturally from the discussion raised by these innovations.

Looking to the question of the vocables themselves, we have noticed that there are several types: those inherited from the IE parent languages through the II stage: non-IE elements inherited through II stage; true IA developments, including loans from linguistic members of the IE family outside India, and loans from non-IA languages within India. It is the business of the historical linguist to separate each of these types in its space-time context; I have criticised some notable contributions to IA etymology in this lecture. Bearing in mind those observations it is necessary for the linguistic investigator to separate these sources by applying strict tests of linguistics on a historical basis.

Coming finally to the question of non-IA loans within IA, let us consider the very large number for instance of the root-substitutes which have the nature of being *Deśi* elements accord-

ing to GRIERSON'S findings.⁸⁷ To what region do these Deśī elements belong? And to which period? Although the two authors who have given us the Deśī lexicons are from the West of India, it would appear from their work that they themselves are not aware of the original place from which these words are incorporated within the IA vocabulary. Thorough research is necessary in the following direction: (i) to trace out in the different linguistic families within India cognates of these so-called Deśī vocables; (ii) to separate as far as possible the actual usage with reference to the space-time context; (iii) to seek for an explanation of each form within the different families according to the most scientific tests available for the purpose; and finally (iv) to correlate the results of these three independent inquiries into a single synthesis. In order that this may be possible it is necessary that our knowledge of the comparative grammar of Dravidian as well as of the Munda families should be brought at least to the present level of Indo-Aryan and Indo-European studies. But this knowledge is to be built upon sound scientific grounds, not as hitherto on biased, unscientific investigations which have made a proper approach difficult of attainment. In the Dravidian families, so far as the literary dialects are concerned, there is further the possibility of a historical approach to linguistics, somewhat parallel to that of Indo-Aryan, and in this manner fresh laurels may be gained for Indian linguistics, and new results established on incontrovertible evidence.

LECTURE VI

SYNONYMICS, UNSOLVED PROBLEMS AND DESIDERATA

IN our discussion of the Verbal Bases of Indo-Aryan we have seen that WHITNEY classified those of OIA into the three categories A, B, and C, B representing the stable element retained in all stages of OIA, A that of the earlier stage and C that of the later stage only. Now the question arises: what is the process by means of which given vocables become unstable and yield place to new forms incorporated in the language? The stable element B represents of course the largest inherited vocabulary of OIA. But how do the vocables under A get substituted by those in C? The question here posed is only one aspect of a larger science which has yet to be developed and to which I made reference last year about this period in my extension lecture at the Bhandarkar Oriental Research Institute in Poona.¹

Our ancient lexicons were mostly on the basis of synonyms, stringing all vocables having a given sense in one enumeration; of course lexicons giving different senses of a single vocable were not wanting; in some even the division was based on the number of syllables. Modern lexicography as developed scientifically in the West determines within certain limits the different senses of a given vocable, classifies the various morphological forms of the vocable, determines its syntactical value in sentences, enumerates derived forms and compound expressions from it, and arranges all these factors where possible in chronological development. Cross references are sometimes given to allied forms. But that is all the extent of the historical lexicography. More practical aims have given us, for example, an English-Sanskrit dictionary or an English-NIA dictionary with reference to some given vernacular of Aryan India, but here the equivalents of the English word are very often sentences in

the other language; where the equivalents are single words, we have scanty information regarding the period when the particular Sk. or NIA word was actually current.

Now a consideration of the fact that the Vedic word *aśva-*² for 'horse' has disappeared from all NIA languages giving place to a non-Aryan loanword represented by *ghotaka-* in late Sanskrit or OIA will show us the significance of a science which deals with such synonymous expressions according to (a) the venue of its currency and (b) the period of its living usage, and tries to find cogent reasons for this suppletion. The scope of the science is not limited to this aspect alone; it will further take into account all the synonymous expressions as recorded in the entire history of the family from OIA to NIA, arrange them on the comparative etymological basis first, and then rearrange such groups according to the chronological strata of the OIA synonyms. If historical lexicography has advanced sufficiently to enable us to assign to each of the vocables the date of its earliest occurrence we have gained some precious knowledge by merely arranging the synonymic dictionary of Indo-Aryan on the comparative etymological basis on chronological principles. For we can determine from such a work the exact period for instance when one ancient OIA word is being replaced by another one, irrespective of whether both are IE or II in origin or not; this will, in its turn, throw some light upon the period itself, especially if the supplanting word is non-Aryan but of demonstrable origin. Even otherwise, we shall gain precise knowledge of the development of the vocabulary, the period of its currency, the changes introduced from period to period, and so far as individual words are concerned, the exact context in space and time of its usage. This is all the more necessary in India where the aspect of interborrowing has gone so deeply in each of the IA languages that only such a historical approach to the new science of synonyms, which I propose to name here the

science of Synonymics, will help us in determining within narrower limits than has been possible hitherto, the exact manner of this interborrowing, separating thus the borrowed element from the true inherited form in its space-time context. This is a new science⁸ which has got to be developed yet, and in the absence of scientific historical lexicography of IA a still distant object of achievement; but that should not deter us from approaching it right from now, and trying to effect as far as the material allows us, a collection of all the relevant facts arranged on the comparative etymological basis at any rare.

Closely connected with the science of Synonymics is that of Semantics; for apart from fresh cultural contacts which may change a given vocable existing in the language at that period by some more popular synonym from the fresh stock, there is the inherent tendency in the vocabulary of the language itself to develop different shades of meanings or nuances of thought, requiring a constant adjustment as to significance between the synonyms existing in that period. This aspect of Synonymics is as important as the other mentioned by me, for we may find a certain vocable forming part not of one entry within the Synonymic Dictionary, but several according to the different senses it has already developed at that time; thus the Synonymic Dictionary or the science of Synonymics applied to IA will not only teach us the exact nature and period of currency of a vocable as well as its location, but will define precisely with respect to the space-time context the development of its meaning. This much for introducing the subject; in the present lecture I am sorry I cannot illustrate all the implications of this new science which I should like to see established in India as an indispensable handmaid to Historical Linguistics; the subject is too vast for treatment here. I shall only give you a rather short analysis of the facts which we may gain from a study of the Verbal Bases themselves. I have mentioned this

subject in the present lecture because it forms part of the Desiderata on which I shall address you by way of concluding this series of lectures. In the brief mention of Synonymics I have indicated at least the general principles on which the material should be collected and arranged; I may also say here that a begiooiog has been made in this direction at the Deccan College Research Institute with reference both to Indo-Aryan and Dravidian.

In the following discussion I am mainly following the definitions given by the various Dhātupāṭhas indicating the signification of the verbal bases of OIA; of course, according to WHITNEY and several other Western authorities these definitions are often misleading, and do not quite represent the true state of affairs. But even admitting that they have a traditional value only, how are we to explain the fact that these Dhātupāṭhas include verbal bases which range themselves in WHITNEY'S A group? A certain amount of research activity must be attributed to the authors of these Dhātupāṭhas, and if the exact significance of the base is not brought out by their definition, we can only attribute it to the lack of modern methods of investigation and instruments of research.

I am considering below a fairly representative number of OIA verbal bases found recorded in the Dhātupāṭhas, but classified by WHITNEY on the basis of the *Petersburg Dictionary* under A, or bases found only in the earlier period of OIA. Noted against them are their synonyms classified according to the threefold division of WHITNEY:—

	A	B	C
AKṢ-	inv-, viṣ	aś-, āp-	ah-, śākh-, ślākh-
*IL-		kṣap-, kṣip-, nud-, sū-	cūrṇ-, juḍ-, pain-, bis-, lābha-, varṇ-

	A	B	C
ĪD-	<i>paṇ- mand-</i> .	<i>ṛc-, gā-, div-, nū-, paṇ-, nu-, vand-, śams-, stu-,</i>	
UC-	<i>sac-, sap-</i> .		
KṚŚ-	<i>tvakṣ-, śo-</i> .	<i>ta kṣ-</i> .	
KṚP-			<i>drāgh-, rāgh-, lāgh-</i> .
KHARJ-		<i>añc-</i>	<i>mañc-</i> .
GU-		<i>kūj-, mlech-, heṣ-, hrād-</i> .	<i>kall-, kṣij-, kṣvid-, guñj-, reṣ-, siñj-, hikk-, hlād-</i> .
CAT-	<i>nādh-, van-</i>	<i>añc-, ard-, av-, nāth-</i> .	<i>cad-, vith-, veth-</i> .
JANJ-			<i>jaj-, riph-, saṁgrāma-</i> .
JINV-		<i>trp-, dhinv- hinu-</i> .	<i>dinv-</i> .
JRI-		<i>ji-</i> .	
² TANC-		<i>kuc-</i> .	<i>kūṇ-, cūrṇ-, yantr-</i> .
TIJ-		<i>jñā-, śi-</i>	<i>cund-</i>
TUNJ-	<i>dagh-, pṛ-, spṛ-</i> .	<i>trai-, bhuj-, rakṣ-, smr-</i> .	<i>tāy-, tej-, daigh-, munṭh-</i> .
DAKṢ			<i>kaṁs-</i> .
DAS-			<i>tas-</i> .
DĀŚ- }	<i>can-, riph-</i>	<i>av-, dad-, dā-, kṣaṇij-, day-, bhal-,</i>	
DĀS- }	<i>san-</i> .	<i>yaj-, rā-, hu-. bhall-, śaṇ-, śraṇ-</i> .	
DR̥MH-	<i>dakṣ-, drh-, bṛmh-, bṛh-, mamh-</i> .	<i>av-, rdh-, edh-, drek-, dhrek-, pūṣ- pyai-, rādh-, pyāy-, bamh-, vṛmh-, vṛdh-</i> .	
DHVR-			<i>kmar-</i> .
NIKṢ	<i>nims-</i>		<i>(cumb-)</i> .

	A	B	C
PIS'-			<i>bind-</i> , <i>sat-</i> .
PINV-	<i>ghṛ-</i> , <i>sac-</i>	<i>ukṣ-</i> , <i>pṛṣ-</i> <i>miṣ-</i> , <i>mih-</i> , <i>mṛṣ-</i> . <i>viṣ-</i> , <i>vṛṣ-</i> .	<i>gaḍ-</i> , <i>jiṣ-</i> , <i>ninv-</i> , <i>minv-</i> , <i>śik-</i> .
BHAND-			<i>bhaṇḍ-</i> .
BHYAS-	<i>dṛ-</i> , <i>dṛbh-</i>	<i>tras-</i> , <i>bhī-</i> , <i>bhrī-</i> , <i>viḥ-</i> , <i>vyath-</i> .	<i>dṛ-</i> , <i>bheṣ-</i> .
MID-	<i>kṣvid-</i> , <i>til-</i> . <i>pruṣ-</i> .	<i>spars-</i> , <i>svid-</i> .	<i>pluṣ-</i> , <i>mind-</i> , <i>rasa-</i> , <i>vars-</i> , <i>snih-</i> .
RUTH-			<i>uṭh-</i> , <i>luṭh-</i> .

It will become apparent from this list that some of these early OIA verbal bases have (i) synonyms which remain through all the stages of the language, classified under the section B above in addition to new forms found in C, while others have synonyms only under C. A third variety is found to consist of only synonyms which were themselves current in the earlier period. But this list does not exhaust the possibilities of further analysis since we have limited ourselves only to the definitions of the Dhātupāṭha; for the synonyms *nikṣ-* and *nim-* found only in the older period are defined by the Dhātupāṭha as 'cumbane' while the base *cumb-* is defined as 'vaktrāsamyoge', and thus ordinarily is not brought into the same category. In Synonymics, however, we shall have to go deeper into this question and arrange the material within the history of a given language on a wider basis of the inherent senses developed by the vocables and include even those which though defined in other terms indicate the same range of thought.

It is not possible for me to enter into detailed considerations of all the problems suggested by this analysis. I shall content myself here with a few. The first verb *akṣ-* 'pervade'

has two synonyms *inv-* and *viṣ-* attested during the earliest period of the language; the bases *āp-* and *aś-* remain throughout both the periods, while the three bases *ah-* *śākh-* and *ślākh-* are perhaps indicated in the later period only, being recorded in the Dhātupāṭhas. Now *ahnoti* 'pervades, occupies' is mentioned only in the lexicons, and corresponds to Sk. *aśnoti*; Pa. Pk. *añhati* or *aṇhati*, and therefore appears to be a Sanskritisation of the MIA forms. The two forms *śākh-* and *ślākh-* 'to embrace, pervade' are probably artificial,* according to MONIER WILLIAMS; but the first is connected by him with the Vedic word *śākhā* 'branch'. In any event these three words appear to be merely later creations, either through Sanskritisation of MIA vocables or inferences from earlier vocables (*śākhā* > *śākh-*; *ślākh-*). *aś* and *āp-* alone remain attested throughout the history of OIA, in all their productive capacity.

Take another base *īḍ-* or *īḷ-* 'praise' attested for the older period only; the two synonyms *paṇ-* and *mand-* share the same characteristic by belonging solely to the earlier period. The later bases include *nū-* which is only another form taken by *nu-* attested during both periods, and *paṇ-* which appears to be again a MIA form going back into OIA comparable to *bhan-*: *bhaṇ-*. There is another base *paṇ-* 'barter, buy' etc. recognised already in the early period of OIA; our base *paṇ-* in the sense of 'praise, honour' is attested in the *Nighaṇṭus* and mentioned in the *Nirukta*. The problem is at once raised whether these two are different bases or an identical base with two distinct meanings. This is one of the difficulties of our science and it can be solved on the following basis only: (i) if the IE or II origin shows a unity of origin semantically it may be considered to form a single base; (ii) if semantically divergent in all the cognate expressions, then we have two distinct bases; and (iii) if it shows both characteristics, severally distributed among the different members of the family, the question becomes one of

faith or mere conviction. Lastly in the case of back-formations to OIA from MIA, even if the source of MIA is the earlier OIA base, we shall have to account them as two distinct bases to OIA, while recognizing the etymological and even the semantic relationship between the two,

Next consider the base *krp-* in *krpate-* 'mourns, laments' whence we get the base *krapate* 'is compassionate' but not productive. The original base *krp-* gives rise to a good number of derivatives some of which remain in the later stage: *krpā-* nom. prop., *krpānt-*, *krpānāyate* 'wishes desires, prays for', *krpānin-*, *krpānyāti* (RV.) 'prays for', *-krpānyū-* 'one who praises', *krpāyati*, *krpā*, *krpāyate*, *krpālu-* etc., but the base itself yields place in the Dhātupāṭha enumeration to the three rime words *drāgh-*, *rāgh-* and *lāgh-*, in the particular sense of 'sāmarthyē'. The first of these, although not recorded in WHITNEY'S *Roots*, shows derivatives in Vedic literature, *drāghayati* in Rkprātiśākhya 'lengthens prosodically', *drāghita-* ibid. 'lengthened metrically', *drāghimān* in VS. 'length', *drāghīṣṭha-* 'longest' found in RV.; *drāghmān-* in RV, MS. same as *drāghimān-* above. Before discussing the remaining two bases, I may point out that we are here depending upon solely the definitions of the Dhātupāṭha; the meaning 'sāmarthyē' of *krp-* is not found recorded in MONIER WILLIAMS, for instance, and therefore in the *Petersburg Lexicons*, and here is a new field of research which has got to be investigated before we can expect to get good results in Synonymics. It is not sufficient to depend on our ancient tradition if we cannot implement it by actually recorded usage or at least mention in independent treatises dealing with subjects other than pure grammar. And a second fact which strikes the eye by this discussion of the base *drāgh-* which I have classified as belonging to C, since it is missing from WHITNEY'S list, points out to the need of bringing his *Roots* up to date; we have a much larger literature to draw

upon and even detailed lexicons like those of Viṣvabandhu SASTRI⁶ which will take us a great deal nearer our objective than the former aids.

rāghate and *lāghate* 'is able or competent' show at once the limit of their usage, for here the western lexicographers have not the independent material before them to enable them to define these bases in a manner diverging from the traditional Dhātupāṭha definition. Are these merely rime-words formed on the pattern of *drāgh-* which is attested in literature? Future research will have to decide this point. If our knowledge of their chronology is exact we may be able to solve a large number of questions connected with synonymics.

This discussion will have demonstrated to you both the possibilities and the short-comings of this new science. The short-comings particularly are due to the fact I have limited myself to the narrow definitions of the Dhātupāṭha; if I had patiently given you the wider formulation collected from the standard lexicons as presented in the scientific activities of the Western scholars, the middle gaps would easily be filled in, and a larger number of 'vocables would have ranged themselves in all the three columns: the significances also would have arranged themselves into more numerous groups, adding materially to our knowledge of semantics.

In the above brief discussion it is not possible to show the methods which may be employed in unravelling the different factors which are responsible for the changes in the vocabulary affecting the language in its gradual evolution; cultural history as a handmaid of this science cannot be overvalued in its importance; political vicissitudes always play an important rôle in effecting such changes. To show the interplay of these factors in the historical development of the vocabulary is tantamount to a study of the cultural contacts effected by political history of the various periods. When the entire material has been properly

arranged, particularly with reference to substantives indicating definite regional fauna or flora, and articles of common use in arts and crafts, it will be possible to make a definite progress.

This brings me to another aspect of Synonymics which I would like to include in the section on Desiderata; it is a Reallexicon of Indo-Aryan⁷ where all the different aspects of life and culture are represented, arranged according to the etymological as well as chronological basis indicated at the beginning of this lecture. No such effort has been made so far and a beginning is just being made in the Deccan College Research Institute, where both the Indo-Aryan and Dravidian aspects are being considered, and there is unlimited scope for development.

I have been lecturing to you on Old and Middle Indo-Aryan; I have therefore eschewed all problems connected with the New IA languages; but in dealing with these we have perforce to deal with written material, not the spoken word, although once this material probably represented the spoken word. Most of this material has come down in manuscript form, the mss. themselves being either dated or undated, and the period of composition either known or unknown but inferrable or not inferrable. If Synonymics is to be established on the right lines we have to establish a working chronology first which can be accepted on both intrinsic and extrinsic evidence: for the forms to be quoted we should have critical editions of all important works belonging to different periods; otherwise our conclusions will not be sound. In order to prove this proposition I may refer here to the word *añjira*— which is considered as an Iranian loanword in Indo-Aryan. What is the antiquity of this word? Now in the vulgate edition of the *Mahābhārata* there seems to be a reference to this fruit, and this might be interpreted to mean that *añjira* occurs in Mbh. and is therefore fairly early in Indian literature; a look at the critical edition will however convince us that the reading *añjira*— is secondary, being an emendation

made by some scribe for *tathā jīrā* of the original text before him.⁸ In order, therefore, to be on absolutely reliable ground with reference to the chronology of IA vocables as occurring in the works of various authors, it is necessary for us to have above all scientific editions of texts based entirely on all the available manuscripts.

I have perforce to mix the last two topics of the present lecture one with the other, namely the unsolved problems and the desiderata. By unsolved problems I do not naturally refer to problems which cannot be solved, but only to those which stand out before us, as yet unattempted, but needing proper investigation. Thus the critical edition of texts comes foremost as the working basis of all the research which has got to be done for the furtherance of the different aspects of linguistics in India.

It is not necessary for me here to deal with the science of textual criticism with reference to the peculiar conditions prevailing in India. But I must point out here to a practical difficulty which such editors have to overcome in their critical work; first and foremost the age of the manuscripts which are not actually dated. Although the science of palaeography has advanced sufficiently as far as inscribed writing is concerned, no historical palaeography of any of the modern languages has so far been attempted;⁹ when we consider that important texts exist today in manuscripts written in the different scripts of India, needing critical edition, and probably a large number of them not dated, it is of the first importance to have the means of dating them, and this only historical palaeography of each language can do. I would therefore consider the development of this branch of palaeography equal in importance to the aspects of linguistic research which I have emphasised in the course of these lectures.

Turning once more to the question of synonymics, we have

yet to answer the question : why do changes take place ? We have discussed that aspect of it connected with the nuances in thought necessitating adjustments among the synonymous expressions themselves ; but when new vocables are included in the language we have still to find out how and when such change occurs ; consider for instance the introduction of provincialisms into the literary language ; it is possible that the political importance of the provinces shifting from one to the other may be responsible for provincialisms entering the literary language ; the venue and period, when determined or determinable, throw a light on this aspect. But there is another possibility which cannot be overlooked and that is of a single great author introducing provincialisms in the language of his work, powerfully influencing the whole literature of his age. Such an influence need not be limited to provincialisms alone, but also to non-Aryan loanwords introduced in the language. This is still an unsolved problem within the Indian range ; we have no idea of such influence wielded by immensely powerful writers like Bhavabhūti and Kālidāsa. This can only be discovered if their individual vocabularies are studied minutely. Compare for instance the *indices verborum* which writers like Shakespeare have in England ; no such dictionaries exist in India either for Kālidāsa or Bhavabhūti, Jñāneśvar or Tukārām.¹⁰ Recent attempts to fill in this want are few and far between. We need today an intensive activity in this direction to decide in each case so far as the vocabulary is concerned in its semantic and synonymic aspects, the effect of the age on the writer and of the writer on the age. It may be argued that in the absence of critical editions of some of these works the efforts at making the *indices verborum* or individual dictionaries may not prove successful ; there is force behind this argument, and we cannot take any of the so-called unscientific eclectic editions as basis for such a work, since the editor emends the text according to his own concepts without paying any attention to the evidence

of the manuscripts themselves. In such cases it is better to take some manuscript which is best preserved and make it the source of the *index verborum*; we see for instance that most of the editions of *Jñāneśvarī* or of Tukāram's *Gāthās* do not even have the value of single manuscripts, and will therefore prove useless for this type of work: it is better to turn to an old well-preserved manuscript as the foundation for this work.

The *indices verborum* and the lexicons for the individual authors should not merely be alphabetical registers of vocabularies in their morphological forms with exact references to their works; they should be intelligently presented as far as possible to make researches in semantics and syntax possible: with this aim in view each worker should carefully go through the text in all these aspects and make the index as useful and complete as possible in every way. This is the least that can be done when critical editions are not available.

The emphasis I have laid on these aids to linguistic studies is only to indicate the present needs of that science; we have now to take the stride forward towards historical linguistics, and apply the most severe tests to the chronology of the facts we have to deal with at every stage, and delimit its provenance as far as possible to the geographical region where it was current. The approach to be developed is both historical and geographic. In this sense Indian linguistics has not made any noticeable advance during the last two decades, and as I have shown in the course of these lectures, the absence of this approach has been responsible for many wrong turns of development."

In addition, therefore, the study of each period in its linguistic development is as essential for evaluating its influence on the individual author of note as that of the author on his period. Among the desiderata therefore are to be included intensive linguistic studies of definite periods, linking the developments

later on period by period in a chronological sequence for definite regions.

One of the most urgent works in this direction is connected with the OIA forms preserved in Sanskrit Inscriptions; I know of at least two attempts, more or less on independent lines, for doing this type of work with reference to Prakrit Inscriptions;¹² but it is even more important to have a dictionary of Inscriptional Sanskrit as far as the published inscriptions go, for we have here a definite chronology to depend upon and particular regions to deal with; independently of literature we shall have in this manner a regional and chronological account of Sanskrit vocabularies which will help us in our new approach to Indian linguistics. If this lexicon is attempted on the lines and principles indicated by me, arranging the material intelligently for easy research in semantics and syntax we shall have reached a step nearer our goal. My observations need not necessarily be limited to the Sanskrit and Prakrit inscriptions: rather, they should be extended to include all the other languages represented in the Indian inscriptions, and for each language there should be one lexicon on these critical principles. In this way the untapped material with definite history behind it will be harnessed for an advance of historical linguistics in the Indian field.

Referring once more to types of literature belonging to well defined periods, it is necessary to have linguistic aids of the kind indicated above. Although much work has been done by European scholars in some of these directions, we find missing, for instance a complete lexicon of the language found in the various Śrauta and Grhyasūtras; the Lahore scheme of Visva-bandhu SASTRI takes account of the Vedas, Brāhmaṇas, Āraṇyakas and Upaniṣads and the Sūtras and when this work is completed we shall have the most complete index of all Vedic words. But for a linguistic study on historical principles we require also a lexicon dealing entirely with the language of the

Sūtra period, arranged on precisely the same principles as hold good for the other types mentioned by me. From this dictionary will naturally follow the most exhaustive treatment of the linguistic aspect of the language.

I have had occasion to refer to certain aspects of proper names in my discussion of the period of the Vedas; these proper names often show, according to the demonstration of so well-known an authority as the late Prof. Sylvain LEVI,¹³ linguistic developments in advance of those affecting the general language in other words they are liable to special development, whether they are Indo-Aryan in character or loanwords borrowed from other families of languages. Now while there are good lexicons for the ordinary vocabularies of Sanskrit, Pāli and Prakrits, and good indices dealing with some of these like the Vedic Index of MACDONELL and KEITH or the *Index to the Mahābhārata* by SORENSON, and the large indices to the volume of *Epigraphia Indica* and various volumes issued by the Archaeological Department, there is not in existence for instance a consolidated dictionary of Proper Names found in all types of Sanskrit literature on scientific lexicographical principles;¹⁴ one lexicon of this kind for Pāli was published some years ago by MALALASEKERA in the Indian Text Series. But more scientific work is required to do the same for Sanskrit, Prakrits and the modern Indian languages on historical principles. Such dictionaries should record all the proper names and arrange the citations on chronological basis, giving exact references; the entire body of literature, whether literary or historical, technical or non-technical, should be utilized for this attempt.

While on this topic I should also like to mention here that one special branch of this Dictionary of *Nomina propria* is limited to geographical names, places, rivers, provinces, and other divisions; these names are of varied kind changing often from one to the other. Apart from the fact that an exact

knowledge is required for identification of places by their various names, linguistically speaking we should know the process of change affecting these vocables, in such cases where they are not completely replaced. Such an undertaking will, on its completion, help historians as well as linguisticians. I was myself faced by this problem while reading a late Prakrit work entitled *Sandēśarāśaka*, where modern *Multan* is referred to by the two independent names *mūlaṭhaṇu* and *sāmoru*, the latter corresponding to Sk. *śāmbapura*, which happens to be one of the alternative names of Multan in the *Purāṇas*.¹⁶ But of the chronology of these names we have no inkling; it was a lucky guess by means of which Ap. *sāmoru* was connected by me with *śāmbapura*— through an intermediary form **sammboru* which helped me in the identification of the place, for the Sanskrit commentary did not give any clue, merely citing the Ap. form as the name of the place. But if a dictionary of the type mentioned by me existed, even the intermediary forms which are now postulated, would probably have been recorded from literature, and shown us the gradual change affecting them in their historical evolution. The historian may be expected to deal with the other advantages accruing to him from such a work.

An even more specialized aspect of this work is naturally connected with the names indicating the fauna, flora, articles of daily necessities, terms connected with arts and crafts, names of culinary articles, and of the various edibles current in the different parts of India from the most ancient period up to the present day, in fact a *Reallexicon* which I mentioned before.

A technical dictionary or rather a dictionary of technical terms is not out of place here; many of the terms of an architectural aspect, for instance, which occur in the *Atharvaveda*, can only be understood in the light of inherited vocables found in the NIA languages; naturally the utility of such a dictionary

cannot be overestimated. All the technical sciences will enter into this aspect, such as medicine, astrology, architecture, mathematics, etc. The same principles apply to this as to the other desiderata so far enumerated by me. It is not pure lexico-graphical work, for it contains within itself the seeds of historical linguistics.

You will probably question me : why do you lay emphasis on this scientific lexicography or *indices verborum*, when there are other types of work to be done in phonology, morphology and syntax ? The reasons are obvious. No scientific work in historical linguistics, whether it is in phonology, morphology or syntax, can be achieved without this fundamental basis. We need critical editions of all the important texts belonging to different periods ; we need *indices verborum* with these texts ; of the unedited texts of great importance we also need *indices verborum* when the date of authors is beyond doubt. We need also the consolidation of these individual indices into lexicons on historical principles of each separate period. Hence the emphasis. All other developments follow from this main but difficult activity just as WHITNEY'S *Grammar* and *Roots* or WACKERNAGEL'S magnum opus on *Altindische Grammatik* followed the publication of the great *Petersburg Lexicons*.

Once historical semantics has been developed on these sound lines all the other aspects of linguistics will naturally follow from the lexicographical activities.

The cultural aspect of these *indices verborum* is equally great ; much work can be done in this direction, for instance, by utilizing the mine of information contained in the *Mahābhāṣya* of Patañjali by using the *index verborum* to this work published by the Bhandarkar Institute of Poona. Imagine then the gains for Historical Linguistics as well as for Cultural History if we have such aids to Śābara's commentry on Jaimini

Sūtras or the commentaries of the great Ācāryas on Bādarāyaṇa's Sūtras. The work of preparing them is tedious indeed, involving untold labour and difficulties, and a good bit of time, but at the end of the labour, as in the case of Patañjali's well-digger, the cool waters of clear knowledge will drive away all the dirt that has accumulated and refresh both the worker and others who would make use of it.

If time were at my disposal I could have dwelt upon the different types of work in historical linguistics which would normally follow from the above endeavours. But I must refrain from such individual problems; I have indicated a sufficient number of them in the earlier lectures; you will find for yourselves a still larger number in your individual researches demanding attention; that is the beauty of real research and its own reward, in that the true researcher never lacks a problem to lead him on, opening at each successive stage an ever widening vista of knowledge. But remember, at every stage you should recognize the need of the space-time context in the formation of the language.

Before turning to some problems of a practical nature connected with Historical Linguistics, and the types of desiderata indicated by me, I must dwell here on the urgent aspect of living linguistics. In my lectures I restricted myself only to Old and Middle Indo-Aryan, as more suited to the subject of Historical linguistics; but the living linguistics or the linguistic investigation of actually current speech forms is perhaps a greater necessity than other aspects of linguistics. We have here an unlimited field for phonetic study, or the study of phonemes characteristic of definite regions, definite classes and castes, and even in age groups, sex and literary status; both auditory and experimental phonetic work will define for us the exact range of phonemic development, restricting each phoneme to its characteristic context in space, class, caste, status, age

and sex. Thus a Phonemic Dictionary of all Indo-Aryan languages may be built up by the side of Dravidian, Munda and Tibeto-Burman families.

The study of dialects naturally follows from this as well as dialect geography.¹⁶ The importance of this is not so much for Indian linguistics as for General Linguistics, and although the types of languages current in India do not exhaust the variety of language-types, the dialect study will bring out general factors of linguistic growth which are not clear as yet. From this aspect of dialectology follows naturally the Linguistic Atlas. The material is fast disappearing by the process of mass education, by the economic stress which brings in different linguistic-groups into a common fold, and the consequent disturbances which have affected for instance the joint-family system, devotion to land, and the absense of migration, characterised the older period. Industrialization will still further affect this wealth of material, and the organized attempts to educate the masses and develop common literary media with a view to establish a common medium for the whole of India as a national language, will hasten the process of this destruction. That is really why the problem of living linguistics is very urgent. More workers are wanted to record the fast disappearing media against the human background while that recording is still possible, and in this way gain for the science of linguistics invaluable material for a future study of general linguistics on the basis of Indian linguistics.

The Linguistic Society of India, which is now running in Calcutta,¹⁷ after its transfer there from Lahore, has already done some important work in these directions. But the apathy of the learned bodies towards this subject has resulted in little recognition being given to this Society. The Panjab University under the guidance of its then Vice-Chancellor, the late Prof. WOOLNER, gave subsidies to this Society and established it in

Lahore, and six volumes of its Bulletin were published. It was due to the present interest shown in Indian linguistics by the Calcutta University and a grant of Rs. 500 from Dr. B. C. LAW that the seventh volume could be published. The practical difficulties consist of (a) lack of properly trained workers and (b) absence of funds to publish the results. The establishing of a Phonetic Department in the Mysore University is therefore a timely one, and there is some hope that in the course of the next five or six years a band of properly trained scholars will be available for conducting research in these lines. In order to encourage such research for the sake of true knowledge, it is incumbent upon our Universities to lend a helping hand to Institutes conducting such research, if not to conduct such research themselves. The complaint registered by Sir Ramkrishna BHANDARKAR in his first Wilson Philological Lecture that much of the work turned out is unscientific, still holds good today, sixty-four years after this Lectureship was instituted; no other commentary is needed to grasp the significance of the state of affairs in India. In what way can the Indian Universities help the growth of this study? I would like to make a few concrete suggestions here. The Linguistic Society of India is a learned body of some standing internationally; but it suffers for lack of funds. If the works of the type I have mentioned above are prepared by individual scholars at great expense to themselves and much time, there should be a venue for publication. No publishers in the ordinary sense would undertake such work which might not bring them sufficient returns; the established series like the Bombay Sanskrit Series, Government Oriental Series, etc. are bound by the condition of their grants, to keep the published volumes in circulation, or in other words go on reprinting the old volumes. Thus even the Government Series offer no scope for these publications. In the interests of Indian scholarship I would request the Universities to set apart a spe-

cial grant each year for such work, and request the Linguistic Society of India to organize this research and its publication. Another method of encouraging such research is to offer scholarships to their own students by Universities which have no linguistic department of their own, and lay down as a condition the conducting of such pure research in Institutes specializing in such research, one of which is the Deccan College Research Institute in Poona. Both these aspects are of equal importance.

I have spoken about the the need of historical lexicons for every aspect of the Indo-Aryan languages, and every period of each individually attested member. If you will take the trouble of reading BLOCH's *Furlong Lecturers* you will realize the value of having reverse indices prepared from such vocabularies for the study of nominal stem formation, or even for a detailed study of phonology in the different positions possible within a vocable. Such reverse indices can only be completed if we have exhaustive lexicons, taking into account all the available material for each language. A beginning has been made by me with respect to Pāli and the literary Prakrits, and I have arranged the material in a card index system, each entry forming a single card. Similarly I am personally getting such an index prepared for Sanskrit, involving more than 7,00,000 entries.

Investigations of the kind which have been enumerated here by me are not purely one individual's hobby or life-work; they are so vast and varied in their content, the effort so extended, and the time involved so great, that a whole school of scholars will have their hands full in fulfilling their expectations. If I depart here from the usual custom of summarising the results of the previous lectures, and the research done so far, it is solely on account of the vastness of the task before us, the problems which need investigation, and the methods which should apply to them. The absence of such definite instruction

before now seems to me to be at the basis of the lack intelligent interest shown by individual scholars as well as learned bodies like our Universities or research institutes. Let the work done by the European masters of the subject like BLOCH and TURNER in such fields under insuperable difficulties which foreigners have in dealing with Indian languages, be an eye-opener to Indian scholarship. I am not doing any propaganda here for Indian scholarship as such; but any scholar worth the name will feel a pang of deep sorrow to see that the country which gave birth to the science of linguistics and phonetics should now depend upon outside scholars to foster its study and continuance in the country and remind Indian scholars of their duty. You will notice with a deep sense of shame that when the question of a scientific lexicon of Prakrits was mooted out three decades ago,¹⁸ the name of an Italian scholar was suggested by Prof. JACOBI; more recently, when the question of a new dictionary of Sanskrit on historical principles was thought of, Prof. WUEST suggested the name of the Paris scholar, Prof. Louis RENOU.¹⁹ What has then become of Indian scholarship, justly famed in the ancient days to attract the best minds outside India to visit their Universities? Are there not institutes and scholars capable of doing this little service to the mother country and achieving distinction which by right must belong to them? There is something inherently wrong in our educational system which prevents genuine interest and love flowering forth in such research activities; there is still greater wrong in that the few exceptional scholars who carry on the torch in their lone struggles and investigations find themselves in darkness, with no encouragement and no scope for development. Science or Art, both have their function in the development of the mind; linguistics as a science is as much needed as language as an art to express our innermost thoughts, and these two aspects of Art and Science, applied to languages, signify the synthesis of the two for a better understanding of the

human mind. Through this tower of Babel we can truly rise to the supermind of the Godhead, if only we get through the varieties and modes to the very centre of expression, rising superior both to Science and Art, and reaching with Intuition that which is beyond the expression of man.

Before I conclude, I must refer here to one major work which I think should naturally devolve upon this University. During the period of sixty-four years for which the Wilson Philological Lectureship has existed, the University has published very little except for the two volumes of the late Mr. N.B. DIVETIA.²⁰ Doubtless the institution of the Publication Grant has given impetus to individual publications; the Devanāgarī Pāli Text Series may be considered to fulfil the needs of the undergraduates for whom it is obviously devised; but this is not original work, much less a critical editing of texts. In linguistics, despite the existence of this lectureship for so long a period, nothing original has been published. The time therefore seems to have arrived when the University should wake up to its sacred trust in this line and undertake a work which would at once place it on the front line of research activities. I refer naturally to a new *Thesaurus of Sanskrit*, a dictionary at once historical and scientific, taking into account all the stages of Sanskrit from the most ancient to the modern, and the vast amount of material published since the seven volumes of the *Petersburg Dictionary*, with BOHTLINGK's shorter edition and SCHMIDT's *Nachträge* appeared. I am glad to say that since I myself started on this gigantic organization by separating its various aspects some years ago, I find independent evidence to the necessity of this work in the writings of Prof. WUEST and that of his teacher Prof. Hanns OERTEL, particularly in the recently published *Woolner Commemoration Volume*.²¹

In that paper Prof. OERTEL mentions the difficulties and need of organized labour under a central body capable of under-

taking this work. I do not consider that this University can allot the necessary funds for establishing a department to carry on this work; and there is at present no need to do so, when there are the Bhandarkar Oriental Research Institute in Poona and the reorganized research departments of the Deccan College Research Institute specializing in linguistics. In addition the Bhāratiya Vidyā Bhavan in Bombay and the Gujarat Vernacular Research Society in Ahmedabad can lend valuable assistance to the organizers of this scheme.

Comparable to my suggestion is the now almost completed undertaking of the Madras University in its *Tamil Lexicon* and the institution of an Office for the carrying on of work for a revised edition of AUFRECHT'S *Catalogus Catalogorum*. Similarly the Mysore University has undertaken the compilation of an *English-Kannada Dictionary*, and a large number of parallel projects are under consideration by other Universities.

Under these circumstances I would like to make a concrete suggestion here to the Bombay University, that a scheme for the preparation of a *Thesaurus Linguae Sanscritae* on historical principles should be drawn up. Such a work on completion will prove to be of the greatest value for further researches on the lines I have indicated. Before the actual publication begins, the minor desiderata indicated by me in this lecture must be ready, and the publication of such material should be a charge on the University. Already the work of Viśvabandhu ŚASTRI and his band of scholars will give us all the Vedic material in a convenient form. Some of the departmental undertakings of the Deccan College will give similar material from the Inscriptions and other sources. It is also possible that simultaneous co-operation between the Bhandarkar Institute, the Bhāratiya Vidyā Bhavan, Gujarat Vernacular Research Society and the Deccan College Research Institute as the organizing centre, may result within a few years in the

accumulation and publication of all the relevant material under the auspices of the University. The Linguistic Society of India and some of the Universities in India may be officially invited to cooperate in this scheme. Thus, without any establishment or departmental charges, but with publishing responsibilities spread over a number of years (which may run to two or three decades), and with the active cooperation of all the important Indian scholars, the University will have the distinction of publishing the greatest undertaking in Indian scholarship under its auspices.

Even if the major scheme does not mature owing to lack of coordination or funds, I would urge upon the University to consider the desiderata I have pointed out as the necessary preliminaries of this undertaking and help individual workers by financing their publication as part of the University printing activities.

I thank you, gentlemen, for having given me so much of your time, patiently listening to what at times might have been tiresome discussion. But there is this much satisfaction for me that I have learnt more during these six lectures than I possibly could have in a month, by compressing within these lectures all the scattered thoughts and experiences collected during a decade of active and continuous research in several directions. Thanks are, therefore, again due to you for giving me this opportunity of introspection. I shall rest content if some of the ideas and suggestions contained in these lectures find some echo in your own minds, and urge you on in the direction of fresh and fruitful research.

May this University which was first in recognizing the value of linguistic studies by accepting this Foundation, still continue to take a leading part in the development of this science, and become a patron and sponsor of ambitious undertakings like the one I have suggested,

REFERENCES.

LECTURE I.

1. Rev. Dr. Ernest TRUMPP's first contribution to Sindhi was A Sindhi Reading Book in Sanskrit and Arabic characters, published in 1858, at London. His *Das Sindhi im Vergleich zum Prakrit und den anderen neuen Dialecten Sanskritischen Ursprungs* appeared in ZDMG 15.690-752 followed by *Die Stammbildung des Sindhi im Vergleich zum Prakrit und den anderen neuen Dialecten Sanskritischen Ursprungs* in ZDMG 16.127-214 during 1861-62.

2. For a general statement of the work of the Junggrammatiker, vide Louis H. GRAY's *Foundations of Language*.

3. BSOS 8.719-20. The oldest grammar of a New Indo-Aryan language by an Indian is the short sketch of Brajbhāṣā by Mirza Khan (prior to A. D. 1676) published by the Visvabharati.

4. Phonology of Gujarati, JRAS (1921) 329-65, 505-44; Cerebralisation in Sindhi, JRAS (1921) 555-84; Recursives in Sindhi BSOS 3.301-15.

5. *Critical Studies in the Phonetic Observations of Indian Grammarians* (James G. Forlong Fund Vol. VII), London 1929.

6. Ernst WINDISCH, *Geschichte der Sanskrit-Philologie und indischen Altertumskunde* (in Bühler's Encyclopedia of Indo-Aryan Philology), Strassburg, 1917-1920 and Walter WÜST *Indisch* (in Grundriss d. ig. Sprach.), Berlin, 1927. See now Suniti Kumar CHATTERJI in *Progress of Indic Studies*, Poona, 1943, pp. 321-31 for recent advances.

7. Cf. a detailed review of this remarkable work by Siddheshwar VARMA in NIA 1.645-8,

8. It was the lecturer's intention to present a detailed Bibliography of Indo-Aryan linguistics as a supplement to these lectures. But the original bibliography has outgrown into a full-fledged volume and is advisedly omitted from the present publication. In its place a short indicative bibliography is, however, included at the end.

9. As taught in his *Aṣṭādhyāyī* and exemplified in Patañjali's *Mahābhāṣya*.

10. Pāli of the Tipiṭaka surviving in the Hīnayāna canon prevalent in Ceylon, Burma and Siam.

11. Ardhamāgadhi, the language of the Śvetāmbara canon; Jaina Māhārāṣṭri, the language of narrative literature, Jaina Śaurasenī, the language of the Digambara canon; Māhārāṣṭri Śaurasenī and Māgadhi; Paisāci and Apabhramśa.

12. These inscriptions, beginning with those of Aśoka, cover a period of over 1000 years. M. A. MEHENDALE has now completed a historical grammar of the Brāhmī Inscriptions (300 B.C. to A.D. 400) composed in MIA, besides a Comparative Grammar of Aśokan Inscriptions (cf. *Bull. DCRI* 3. 225-90).

13. On Buddhist Hybrid Sanskrit vide the following papers of Franklin EDCERTON: The Prakrit underlying Buddhist Hybrid Sanskrit. *BSOS* 8.501-16; Nouns of the α -declension in Buddhist Hybrid Sanskrit *HJAS* 1.65-83; The Meter of the Saddharmapundarīka, *Kuppuswami Sastri Comm.* Vol. 39.45. The Aorist in Buddhist Hybrid Sanskrit *JAOS* 57.16-24; Some curious Middle Indic Aorists *ABORI* 23.126.

14. A large number of Apabhramśa texts have become available now through the efforts of JACOB, ALSDORF, VAIDYA, Hiralal JAIN and UPADHYE; some Buddhist Ap. texts have been published in Bengal by SHAHIDULLA and BACCHI.

15. *Wörterbuch zum Rigveda*, 1873 (new anastatic reprint in 1936).

16. Chief among these are: JACOBI's editions of *Bhavisayattakahā* (1918) and *Saṇakkumāracarīu* (1921); VAIDYA's *Jasaharacarīu* (1932) *Mahāpurāṇa* (1937-41); ALSDORF's *Harivaṃśapurāṇa* (1936) and JAIN's *Karakandacarīu*, *Pāhuḍadohā*, *Sāvayadhammadohā*, etc.

17. It is mainly through literature that languages become standardised norms.

18. Thus, for instance, the Nāgarī characters used for Marāṭhī or Hindi do not represent the exact phonetic value of the vocables, and the same is true practically of all the literary NIA languages. We have to reckon here with the deceptive character or orthography when new sounds came into existence the nature of which was not understood and new characters for which were not devised. Thus MIA in India, whether written in Kharoṣṭhī or Brāhmī, has no spirants in its orthography, whereas the Kharoṣṭhī used in Khotan uses special characters for these sounds.

19. Hemacandra 2.8.

20. LEUDERS, *Bruchstücke buddistischer Dramen*, Berlin 1914.

21. There are two possible views regarding these dialects: the opposite view has found a large number of supporters. The Gāthā dialect is considered to be a conscious artificial approximation of the Prakrit to Sanskrit. According to Suniti Kumar CHATTERJI, the Sanskritized Bengali of the Sekaśubhodaya (16th century) illustrates this tradition.

22. The MIA basis of Epics and purāṇas has been assumed by PARGITER on slightly different grounds.

23. Cf. note 13 supra.

24. E. D. KULKARNI, Case Variation in the critical edition of the Mahābhārata: I. The Dative and its variants, *BDCRI* 1. 318-26; Verbs of Movement and their variants in the critical edition of the the Ādiparvan, *ibid* Appendix to vol. 2, 1-123; Unpāṇinian forms and usages in the critical edition, *ABORI* 24. 83-97 and *BDCRI* 4. 227-45; *NIA* 6. 130-39. M. A. MEHENDALE: Absolutes in the critical edition of the Virāṭaparvan *BDCRI* 1.71-73.

25. For a reference to CANEDO's work see SUKTHANKAR, *A statement regarding the Progress of the critical Edition of the Mahābhārata*, 1940, p. 5.

26. S. M. KATRE, Proc. of 9th All-India Or.Conf Trivandrum, pp. 20.276-92 and *Annals BORI*.

27. BAILEY, T. G.: The language of the Northern Himalayas, London 1908; Linguistic Studies from the Himalayas 1915; Grammar of Shina Language, 1924, etc.

28. D. L. R. LORIMER, Phonetics of the Gilgit Dialects of Shina, *JRAS* 1924; The Forms and Nature of the Transition Verb in Shina *BSOS* 3., etc.

29. WHITNEY, *Sanskrit Grammar*⁸ (1924), p. xix.

30. *BSOS* 5.719.

31. S. K. CHATTERJI *Calcutta Review* (Sept. 1936) p. 283.

32. BLOCH, *BSOS* 5.722.

33. *ibid* 724.

34. GEIGER, *Pali Litteratur und Sprache*, § 53.

35. Pali, as a standardised language may have drawn its characteristics from several dialects; we may also have to take into account the corruption of the text in later times.

37. *Portuguese Vocables in Asiatic Language*, s. v. *abôbra*.

38. In Śrīpati's Marāṭhī commentary or his *Jyotiṣaratnamātā*, if NIA 1.400, f. n.

39. S. K. CHATTERJI, NIA 2.740-47.

40. cf. Prearyan and Predraavidian in India (Calcutta).

41. NIA 2. 421-22.

42. A Volume on Indian Languages by TURNER was promised in the Heritage of India Series, but has not been published so far.

43. These lectures were delivered from notes and have not been published.

44. A number of problems raised here are receiving attention at the Deccan College Research Institute in Poona.

LECTURE II.

1. Nirukta.

2. *Kṣīrataraṅgiṇī*, edited by Bruno LIEBICH, Breslau 1919.

3. *Mādhavīya-Dhātuvṛtti*, Benares 1897.

4. *Dhātupradīpa*, edited by CHAKRAVARTI, Rajsahi 1919.

5. LIEBICH, *op. cit.* 216-47.

6. Edited by LIEBICH, Leipzig 1902.

7. LIEBICH, *Kṣīrataraṅgiṇī*, 248-89.

8. Edited by KIRSTE, Vienna 1901.

9. Ed. by Dines ANDERSEN and HELMER SMITH, Copenhagen 1921.

10. Ed. by HELMER SMITH, I—II—III (1928-29-30).

11. Collected by SIR GEORGE GRIERSON in his monograph 'The Prakrit Dhātuvādesas according to the Western and Eastern Schools of Prakrit Grammarians', Calcutta 1924.

12. *The Roots, Verb Forms and Primary Derivatives of the Sanskrit Language* (Leipzig 1885). p. v.

13. *Das altindische Verbum*, Halle 1874.

14. On the Verbal Roots of the Sanskrit Language and of the Sanskrit Grammarians, *JAOS* II. 1-56;

15. Contributions to the history of verb inflection in Sanskrit, *JAOS* 10, 219-76, 311-24 (1876).

16. *Zur Sprachgeschichte des Veda: Das Verbal-system des Atharva Veda*, Berlin 1898.

17. *Zur Einführung in die indische einheimische Sprachwissenschaft* I-IV, Heidelberg 1919-20; *Materialien zum Dhātupāṭha*, Heidelberg 1921.

18. The division of IA roots falls into the following main categories: (A) Native IE in origin: (i) IE > IIr. > IA; (ii) developed out of IE as fresh creations in IIr. > IA; (iii) newly created out of IE > IIr. material inherited in IA. (B) Foreign or borrowed from extra-IE speeches.

19. This may be considered as an *argumentum ex silentio*. Future research is bound to narrow down this class considerably; for the present, however, it opens up new avenues of collateral research at least in Gk., Ir. and IA in this early aspect, and it is only such an approach which can really contribute positively to our knowledge of IE developments.

20. Can the hypothesis of accidental non-occurrence be sufficient to explain a large number of such non-occurrences, when cognates may be found in contemporary MIA? It would be interesting to find out how many of these remained in OIA

dialectal forms without becoming sufficiently important for inclusion in the literary OIA speech.

21. This index will be published separately as a monograph.

22. Cf. 21 above.

23. *JAOS* 11.1-56.

24. KIELHORN's edition, vol. I, p. 9.

25. The question of dating *r* and *l* sounds in the *Rgveda* cannot be considered faultless, for it is mostly dialectal, the Vedic literary dialect being an *r* dialect. But as we descend in time we notice that earlier *aram* > later *alam*, etc. so that where both forms occur we can reasonably expect *r* forms to be earlier than *l* forms in the standard norm. Theoretically, however, the lateness is only with regard to standardisation of dialects. The *r*-dialect was standardised earlier than the *l*-dialect, that is all.

26. *Ueber Reimwortsbildungen im Arischen und Altgriechischen*, Heidelberg 1916.

27. *mlev*-is a semi-tatsama while *mev* is a tad-bhava going back to OIA *mlev*-.

28. *Kane Festschrift* 256-7: On Prakrit *uccudaṛ* and *uccidima*-.

28a (wrongly printed as 28). The *r*-forms are semitatasamas, showing loanwords.

29. Cf. *garjati* > MIA *gajjati*:*gañjati*, with nasalisation for double stops.

30. Cf. Panjabi *kapp*- 'to cut'.

31. Cf. Oriya and old Bengali *ghen* 'to seize'.

32. *Trombetti Volume* 287-304.

33.-y>-j- in RV is rather unexpected; but the possibility of an early dialectal form in this single attested word cannot be overruled.

34. BSOS 5.

35. Both <*sphrt-, cf. German *spalten*.

36. JAOS 11.2.

37. This list will be published along with the synoptic table of roots in a separate monograph.

38. Cf. LIEBICH, *Materialien*.

39. *ibid*.

LECTURE III.

1. BSOS 5.

2. JAOS 60. 362-3.

3. KUIPER, *Die indogermanischen Nasalprasentia*, Amsterdam 1937, 49-64.

4. *Introduction à l'étude comparative des langues indo-européennes*, 7th ed.,

5. JAOS 11. 5.

6. The growing popularity of pleonastic-ka- in MIA and NIA is a noteworthy factor of IA development.

7. *Geschichte und Kritik der einheimischen Pāli Grammatik und Lexicographie*, Strassburg 1902.

8. Bull.DCRI 1.228-317.

9. *Pali Lit. u. Spr.*

10. To be published shortly.

11. Cf. DEBRUNNER, BSOS 8.487-500.

12. *Dasaveyāliya*.¹

13. See f. n. to Lecture II above.

LECTURE IV.

1. *Griechische Wortbildungslehre*, Heidelberg 1917.
2. *Die Altindische Nominalbildung*, Jena 1878.
3. *Vedic Grammar*, Strassburg 1910, and *Vedic Grammar for Students*, Oxford 1918.

4. This, in spite of the fact that his work inaugurated the second stage in the scientific study of NIA languages. I have Prof. SUNITI KUMAR CHATTERJI'S authority for remarking here that the largest number of formative suffixes in any NIA speech has been given by Prof. SUBHADRA JHA in his, as yet, unpublished, thesis, *A Historical Grammar of Maitili*.

5. *Suffixales -tha*.

7. The different varieties of *-a* are denoted by Pāṇini under such special technical terms like *añ*, *ac*, *an*, *ka*, *kañ*, *khac*, etc. A study of these different formative affixes is bound to throw light on the development of OIA grammatical theories.

8. *La formation nominale et verbale en p* Paris 1934.

9. *Festschrift Winternitz* 18-28.

10. *Zur indoarischen und griechischen Nominalbildung*

11. *Grammaire Sanscrite* §§138-205.

12. *Mahābhāṣya* (KIELHORN'S edition) I. 61 : *praya-tanam prayatnaḥ*.

13. Pāṇini 4. 4. 142.

14. RENOU, *op. cit.* 198 for *-eyin* cf. Pāṇini 4. 3. 109 and *-eyaka* ib. 4. 1. 140, 2.9.

15. *ibid.* 203; Vārt. to Pāṇi; 5. 2. 122.

16. cf f. n. 13 above

LECTURE V.

1. BLOCH, *L'indo-aryen*, p. 1.

2. Sylvaio LE'VI io JA; cf. f. n. 4 below.

3. Jean PRZYLUSKI io JA; cf. f. n. below.

4. cf. *Prearyan and Predravidian in India*, Calcutta 1926.

5. BSOS 5.733.

6. *ib.* 5.743.

7. *ib.* 5.737.

8. A rich or numerous eotourage roood the Dravidian root in Dravidian laoguages, with ao isolated form in OIA in froot of it, offers, according to Prof. S. K. CHATTERJI, a possible ground for assuming Dravidian (or other noo-Aryan) coonection.

9. BSOS 5.738.

10. IA (1918).

11. The possibility of coovergence of inherited and loan-words must not be lightly brushed aside, so that io *aṭ-* we may have both Dravidian **aṭ-*, *aḍ-* and IA **ṛt-*.

12. Cf. f. n. 8 above.

13. BSOS 5.737.

14. IHQ (1927).

15. Prof. CHATTERJI has kindly supplied the followiog Middle Bengali evideoce (c; 1450 at the latest) from *Śrī-Kṛṣṇa kirttana* of Caṇḍidāsa where the root *bul-*(in ioflected verbal forms mostly) occurs 95 times aod *bol-*(mostly in nouo form *bola*) 116 times and also *bū-*63 times. The past base is either *bu-il* or *bu-yil* (63 times) < *bruta-illa* : **bua-illa*, *bu-ila*,

bu-yila) or *bul-il* (<**brū-lla-illa*) but never *bol-il* as in Modern Bengali.

16. Synthesis was the genius of the Indo-Aryan in its integral sense.

17. Emphasis has been laid only on loans by IA and not vice versa.

18. BLOCH, *L'indo-aryen* p. 39.

19. *ZDMG* 93. 105-123.

20. p.

21. *Bull. DCRI* 3.225-90.

22. *ABORI* 21.

23. The root or original meaning of this word, like *pinda* may be 'filled in, fixed, not moving'

24. Cf. f. n. 16 above.

25. *Kharoṣṭhi Documents*, p. VI.

26. *Calcutta Review* Sept. 1936, p. 285.

27. *Dhātuvādesas*, p.

LECTURE VI.

1. *ABORI* 20.286.

2. *aśva* survives in some Dardic (?) dialects of Kashmir as *ās* and in other NIA languages in compounds.

3. A good deal of work has been done in Europe, particularly in France, by Prof. GILLIERON, but the lines suggested here are so comprehensive and vast, and the field so virgin, that the qualification 'new science' appears justified.

4.

5. Cf. Hindi *srāp sarāpa* < *śāpa* 'curse', where the doublet comes in through prothesis of *r*, noted as a characteristic of Apabhraṃśa. In these cases the simpler form is the earlier, as opposed to the above.

6. *Vaidikāpadānukramakośa*.

7. P. T. Srinivasa AYYANGAR'S *Life in Ancient India and in the Age of the Mantras*, and *Ancient Tamil Culture* are our first Indian essays in this line. GRIERSON'S *Bihar Peasant Life* is a conspicuous example of this kind of lexical recording for NIA.

8. *Mahābhārata*, crit. ed. 3.155.40 c.

9. Attempts have been made for Bengali by the late Rakhal Das BANERJĪ and Mm. Haraprasad SASTRI.

10. Now fortunately we have such aids to Tulsidas' *Rāmacaritamānas* and Jaisi' *Padmāvat* by Dr. SURYAKANT and one for Jñāneśvarī by Mr. M. G. PANSE of the Deccan College Research Institute (in manuscript) and for some early Mahānubhāv works by Dr. R. G. HARSHE of the same Institute.

11. It would be wrong to say that Indian linguists have not paid attention to this aspect; but sufficient emphasis has not been laid on it; that is all.

12. Mr. M. A. MEHENDALE of the Deccan College Research Institute has completed his Ph. D. dissertation on this topic; and an announcement of a dictionary of Inscriptional Prakrits was made by Dr. B. M. BARUA in his presidential address at the Prakrit section of the Tirupati Oriental Conference.

13. *Festschrift Winternitz*.

14. The so-called geographical dictionaries in existence are merely apologies for this work. Marathi and Bengali works, comparable to the European Classical Dictionaries, do not go far enough.

15. *Karnatak Historical Review*. 4.

16. The work of GILLIERON in France and JABERG-JUD in Switzerland and Italy should be a guide to us in this line. The recent American work in this direction is an improvement on both and must be taken into consideration.

17. Transferred to Calcutta in 1938.

18. ZDMG 66.544-8.

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INDEX VERBORUM

a-class of, 39
 am's-61
 ambati-116
 ak-72, 82
 akkhā-83
 aktu-105
 aka-78, 158, 160
 aksat-46
 akṣase-46
 ag-72, 82
 agnāyi-108
 agni-106
 aghnam-59
 ānka-72
 ānkusa-111
 ānkte-49
 ānkh-60
 āng-78
 ānga-72, 82
 āngīkṛ-80
 ānguli-107
 ānghri-107
 acati-46, 49
 acate-46, 49
 ajati-49
 ajate-49
 ajathya-121
 ajanani-116
 ānc-42, 159
 āñj-42
 āñjalikṛ-80
 āñjira-164
 ātai-99
 ātati-67, 136
 ātavi-116
 ātṭa-101
 ātṭai-99
 ātṭana-76
 ātṭā-136

atṭei-136
 *atṭyati-99, 101
 atṭyate-99, 100
 adai-99
 adi-136
 adugu-136
 addā-136
 addi-136
 anapayite-91
 anhati-161
 at-42
 atati-49, 67, 136
 atate-49
 atasih-104
 atitthi-106
 atitthih-136
 atkah-105
 atti-55, 79
 atri-105
 attha-29
 atth-83
 ad-class of. 39, 40
 42
 ada-86
 adarsat-79
 adasva-55
 adman-106
 admara-115
 adhama-110
 adhara-110
 adhobbhū-80
 an-42
 anakti-49
 anati-49, 55
 anate-49
 aniti-55
 aniyuttā-92
 anila-107
 anuniṣu-113

anurujjhati-82
 anurudha-82
 anuvataṛam-89
 anuvatisare-89
 anuvidhā-82
 anuvidhiyatām-89
 anuvidhiyare-89
 anuvidhlyyati-82
 anuvekhamāne-90
 anuvotare-89
 ant-72
 antaka-109
 antaradhā-82
 antaradhāyati-82
 and-72
 annāyu-113
 anhati-161
 apatyam-109
 apara-110
 apas-104
 apasyā-104
 apinaddha-95
 aputriya-120
 apnas-106
 abobra-31
 abbavani-116
 abhiruyai-96
 abhriya-103
 am-42
 amati-55
 amatyāh-109
 amatra-105
 amāte-49
 amioanta-51
 amitt-49
 amiva-116
 amisi-55
 amṛtatva-109
 ame-55

ambara-24
 ay-56
 ayah-103
 ayali-49, 56
 ayate-49
 ayatha-106
 ayasmaya-110
 ayananta-58
 arani-104
 aranyāni-108, 122
 ari-104
 aristatāti-109
 arus-105, 117
 arkia-108
 arc-42
 arcis-104
 arj 42, 56, 100
 arjati-56
 arjita-100
 arnava-121
 arti-56
 artha-106
 ard-42, 159
 ardati-65
 ardayati-65
 ardhika-120
 arh-73
 arbhaka-109
 arya-110
 arv-73
 arvācina-108
 arvāvat-110
 ars-60
 arsati-49
 arsate-49
 arb-42
 arbati-46
 arbate-46
 al-78

alam-78
 alamkaroti-80
 alamkṛta-80
 alaha-86
 alipat-96
 av-42, 159
 avakṛta-114
 avacchinoti-78
 avate-56
 avadagbha-114
 avadhit-79
 avapna-114
 avama-119
 avamanya-114
 avara-119
 avalag-79
 avasthāya-114
 avāśmva-114
 avikkhittena-92
 avithya-121
 avocat-79
 as-42, 65, 158, 161
 asa-88
 asanā-104
 asani-104
 asamana-89
 asna-106
 asnāti-49
 asni-115
 asnitapibatīya-80
 asnite-49
 asoute-49
 asnoti-49, 161
 asru-107
 asūla-110
 asva-156
 as-42, 83, 86, 87, 88,
 89
 asitavaty atithau-151
 asankṛ-80

astam-eti-80
 asti-79, 93
 astis-136
 asyati-46
 asyate-46
 ah-158, 161
 ahankāra-80
 ahankuryāt-80
 ahi-104
 ahnti-161
 āgam-82
 āgnivesi-108
 ācam-82
 āji-104
 āñapita-91
 ātu-136
 ādhatta-100
 ādhapa-100
 ādhappa-100
 ādhava-100
 āndira-122
 ātatāyin-110
 ātmasāṅkṛtya-80
 ādamāna-89
 ānāpayita-91
 āndola-122
 āp-42, 158, 161
 āpnute-46
 āpsoti-46
 āmantraṇiya-104
 āmayati-55
 āmusyāyana-108
 ār-60
 ārabha-86, 86
 ārabhare-89
 ārabhisare-89
 ārṣeya-109
 ālabha-86
 ās-42, 80
 āsati-49

- āsate-49
 āsti-48
 āste-48
 āba-79
 i-42, 78, 83, 86, 87, 98
 °ikkha-86
 ikṣvākn-104
 iṅkhati-48
 iṅkhatē-48
 iṅg-43
 iṅgati-49
 iṅgate-49
 iccha-87
 iccbati-56
 icchāmi-92
 icha-87
 ichati-50
 ichate-50
 °ijyā-118
 iṭ-67, 136
 iṭe-49
 iṭvara-107
 idhma-118
 in-78
 inoti-56, 64,
 iudrāṇi-108
 indb-42
 inv-158, 161
 Invati-64
 ims-76
 imb-76
 iyarti-56
 ii-42, 158
 is-42, 42
 isati-56
 ise-56
 iṣṭakāva-121
 iṣṭatvatā-109
 iṣṭi-105
 iṣṇati-56
 iṣmin-106
 iṣyati-50, 56, 70
 iṣyate-50
 iṣṣati-50
 iṣṣate-50
 iḍ-159, 161
 iḍanya-112
 iyate-56
 ī-161
 īṣ-42
 īśā-104
 īśvara-107, 115
 īsati-49
 īgate-49
 īs-76
 īh-42, 76
 īhati-48
 ībate-48
 n, class of, 39
 ukkoḍā-130
 ukkoḍa-130
 ukkodī-130
 ukkoḍiya-130
 ukkhinai-95
 uktba-118
 ukṣ-42, 160
 ukṣati-50
 ukṣate-50
 uksan-103, 114
 ukṣar-104
 ngghn°ai-96
 uc-42, 159
 uccidai-96
 ujjb-67, 79
 nṭh-160
 uttama-109
 utsa-121
 nd-46
 udvat-123
 unap-56
 unoti-56
 und-42
 upatyakā-123
 upala-120
 npāhanāti-86, 88
 ubb-42
 ubhati-66
 ubhayāvin-111
 nbbnās-56
 umbb-42
 umbbata-56
 uras-104
 urasigrhya-80
 oru-105
 urb-73
 orv-73
 uibanīṣṇu-114
 uvāca-79
 uve-56
 nvviva-94
 nsāmāna-58
 uṣ-42
 °usmi-115
 ussasati-92
 ūh-42
 ūkb-60
 ūrikṛ-80
 ūrjasvafa-122
 ūrṇāyu-113
 ūrmi-106, 118
 ūh-43
 ūbati-49, 50
 ūbate-49, 50, 146
 ūhe-146
 ṛ-42, 67
 ṛkva-107
 ṛkvan-107

rc-159
 recchati-46, 56
 rcebate-46
 rch-42
 rj-56
 rjisa-107
 rjuman-119
 rjyate-56
 rñj-42
 rñjati-49, 56
 rñjate-49, 56
 rn-42, 56
 rnāti-56
 rnāvan-110
 rnoti-49, 56
 rnve-49
 rt-67
 rtati-136
 rtāyu-113
 rdh-42, 159
 rdhyati-49
 rdhyate-49
 rbhva-107
 rsabha-110
 ekata-109
 ekatiya-120
 ekākin-120
 ekānisikr-80
 ej-42
 edi-136
 eti-49, 56
 edh-42, 80, 159
 edhatu-116
 elima-121
 es-42
 esati-49, 56
 esate-49
 ehati-50
 ehate-50

otu-105
 omā-82
 kams-159
 kak-43
 kakudman-114
 kakkh-43
 kakh-43
 kacchura-122
 kañc-43
 katt-60
 kaṭhora-122
 kaḍḍhai-76
 kaṇati-71
 kaṇeru-33
 kaṇḍula-122
 kata-90
 katitha-110
 kath-43, 67
 katthati-49
 katthate-49
 kath-43, 67
 kantati-84
 kandati-70
 kap-68
 kapila-110
 kappara-97
 kam-nominal forms of
 130
 kama-86, 129
 kamana-129
 kamp-42, 61
 -nominal forms of
 129, 130, 131
 kampa-86
 kampati-48
 kampate-48
 kampila-115
 kamboca-145
 kamboya-145

kara-nominal forms of
 130, 130
 kara-87, 89
 karai-95
 karaṇa-104
 karati-84
 karanti-56
 karamina-89
 karisa-121
 karuṇa-118
 karenu-33
 karo-87, 88
 karoti-50, 56, 84
 karote-89
 karotha-92, 92
 karonte-89
 karj-43
 kartati-56, 68
 kartari-115
 kartva-106
 karb-73
 karmaṭha-122
 karmara-110
 karmāra-122
 karv-73
 karṣati-46, 83
 karṣate-46
 karṣi-56, 104
 kal-43
 kala-87, 88
 kalasa-111
 kale-87, 88, 92
 kaleti-92
 kalemi-92
 kalpya-112
 kall-159
 kalvantu-105
 kavivana-109
 kaṣ-42
 kaṣati-50, 38

kasate-50
 kassati-83
 kāk-60
 kāṅkṣ-42
 kāṅkṣati-50
 kāṅkṣate-50
 kāṭbu-29
 kāṇeru-119
 kānina-119
 kāmāti-129
 kāmā-117
 kāyas-116
 kārīta-91
 kārēti-91
 kālāpita-91
 kās-42
 kāsati-48
 kaśate-48
 kās-43, 65
 kāsati-49
 kāsate-49
 kīṭ-43
 kit-79
 kīnāti-83
 kirati-50
 kirate-50
 kil-99
 kisora-122
 kisai-95, 96
 kīrtanya-106
 ku-42
 kūc-42, 159
 kūcati-50
 kūciti-116
 kūñc-43
 kūñcate-50
 kūñj-43
 kuṭīla-112
 kuṭṭāya-117
 kuṭṭayati-65

kuṭṭāka-113
 kund-43
 kuts-43
 kuth-43
 kup-43, 61
 kupyati-50
 kupyate-50
 kubbatī-84
 kuratāva-121
 kurute-50
 kurum-136
 kurta-32
 kurtani-32
 kurd-43
 kurdi-32
 kurmi-136
 kurvatī-84
 kurvantī-84
 kus-43
 kuḥat-95
 kūj-42, 159
 kūjate-46
 kūḍ-42
 kūḍayati-68
 kūṇ-43, 159
 kūrdati-50
 kūrdate-50
 kṛ-42, 56, 65, 85, 88, 89
 -nominal forms of 131-2
 kṛcchra-24
 kṛd-72
 kṛṇute-50
 kṛṇoti-50, 56
 kṛt-42, 56
 kṛtavān-151
 kṛtṇu-105
 kṛtālī-46, 50, 56, 68
 kṛntate-50
 kṛntatra-117

kṛp-42, 68, 72, 159, 162
 kṛpa-162
 kṛpaṇa-104, 162
 kṛpaṇāyate-162
 kṛpaṇin-162
 kṛpaṇyate-162
 kṛpaṇyu-162
 kṛpate-24, 162
 kṛpayati-162
 kṛpā-117, 162
 kṛpāyate-162
 kṛpālu-162
 kṛpsa-24
 kṛs-159
 kṛs-42
 kṛsati-50, 83
 kṛsate-50
 kṛsika-120
 kṛśivala-111
 kṛśṇaśa-121
 kṛt-42
 kṛp-42
 kel-79
 kev-63, 66
 kesava-121
 komboca-145
 koṣṭikī-80
 knūy-43
 kmar-45, 159
 krakṣ-60
 kratu-105
 krant-42
 krantati-46, 70
 krantate-46
 krap-68, 72
 krapate-162
 kram-42
 -nominal forms of 131
 krama-86

- krāmāti-50
 krāmate-50
 kri-class of 39, 40
 42
 kriḍ-42, 99
 kriḍati-50
 kriḍate-50
 kriṇāti-50
 kriṇite-50
 kruñc-43
 kruḍ-72
 kruḍhyati-46
 kruḍhyate-46
 kruś-42
 krūd-62
 krūdayati-68
 krūd-42
 krośati-46, 50
 krośate-46, 50
 kladathu-118
 klandati-70
 klām-43
 klamatha-118
 klid-43
 klidyati-50
 klidyate-50
 kliś-43
 kliśyati-50
 kliśyate-50
 kvath-42
 kvathati-50
 kvathate-50
 kvanati-71
 kvañj-159
 kṣap-42, 87
 kṣana-87
 kṣaṇute-50
 kṣanoti-50
 kṣap-61, 158
 kṣapati-48, 65
 kṣapate-48
 kṣamati-48
 kṣamate-48
 kṣayati-56
 kṣarati-46
 kṣarate-46
 kṣal-42
 kṣi-42, 43
 kṣip-42
 kṣipāti-56
 kṣinoti-56
 kṣidhi-56
 kṣip-42, 158
 kṣipati-46
 kṣipate-46
 kṣipita-112
 kṣipta-90
 kṣiyati-56
 kṣij-159
 kṣiban-114
 kṣiyate-56
 kṣiv-43
 kṣu-42
 kṣud-42, 64, 64
 kṣup-60
 kṣubhñāti-56
 kṣubhñayus-56
 kṣubhyati-50, 56
 kṣubhyate-50
 kseti-56
 ksetra-117
 kṣai-42
 ksodati-50
 ksodate-50
 ksohbate-56
 kṣu-42
 kṣmīlati-71
 kṣvid-48
 kṣvid-43, 159, 160
 kṣvedati-68
 kṣvedati-68
 khakkh-43
 khac-43
 khaj-43
 khañj-43
 khan-42
 khanati-50
 khanate-50
 khanitra-117
 khambha-17
 kharj-159
 kharjūra-148, 148
 kharb-73
 kharv-73
 khāṭṭya 80
 khād-42
 khānāpāpita-91
 khānāpita-90
 khid-42, 61
 khipa-87
 khud-60
 kbelati-65
 khev-63
 gaccha-86, 86
 gacchat-50
 gacchate-50
 gacchamāne-92
 gacha-86
 gajati-68
 gañjati-68
 gaḍ-160
 gaṇaniya-112
 gaṇḍ-61, 83
 gaṇbāti-83, 84
 gātoṣmi-151, 151
 gadati-65

gadh-60
 gandh-83
 gam-42, 48, 98
 gama-86
 gamai-95
 gar-61, 78
 garati-69
 garaha-86
 gariman-119
 gariyāms-119
 garutā-118
 garj-43, 61, 78
 garjati-50
 garjate-50
 gard-62
 gardahha-122
 garh-73
 garv-73
 garh-42
 garhati-48
 garhate-48
 gal-43
 gala-86
 galati-69, 69
 gavis-81
 gaviṣṭi-81
 gaveṣ-70, 80
 gaveṣaṇa-81
 gā-42, 159
 gāhgeya-121
 gātu-105
 gāyati-50
 gāyate-50
 gāyatra-117
 gārgika-119
 gārgeya-119
 gārgya-119
 gārgyāyana-119
 gārgyāyāni-119

gāh-42
 gāhati-48
 gahate-48
 girati-69
 gilati-69
 gilāyu-113
 gu-42, 159
 guñj-43, 159
 guñjati-68
 guñjulla-97
 guñjella-97
 guñjolla-97
 guṇṭhayati-69
 gummaṇa-97
 gur-42
 gurati-48
 gurate-48
 gurd-42
 gulph-60
 guvai-95
 guṣp-60
 gū-43
 gūrdh-60
 gūh-42
 gūhati-50
 gūhate-50
 gr-42, 42
 grj-68
 grñj-68
 grṇatti-56
 grṇāti-50
 grṇite-50
 grtsa-107, 121
 grdh-42
 grdhnu-106
 grṇthati-69
 grhh-42
 grbhi-104
 grh-42, 68, 72

grhu-105
 grhṇati-68
 grhṇate-68
 grhṇāti-50, 50
 grhṇite-50, 50
 gr-42
 gepate-70
 gev-63, 66
 gosate-70
 gomaya-121
 gomin-120
 gaudhera-122
 grath-56
 grathnāti-56, 69
 granth-42, 56
 grantha-147
 granthati-56, 69
 granthi-104
 grabh-64
 gras-64
 grasati-48
 grasate-48
 grab-42, 72
 graba-88
 grāmīṇa-121
 glā-42
 glāna-116
 glāni-116
 glāyati-46, glāyate-46
 glepate-70
 glev-63, 66
 glesate-70
 ghaṭ-43
 ghaṭati-50
 ghaṭate-50
 gharukka-97
 gharma-118
 gharṣati-50
 gharṣate-50

ghas-64
 ghasai-95
 ghasuri-115
 ghasmara-115
 ghasvara-115
 ghātuka-105
 ghimsati-70
 ghiṇṇate-68
 ghīsa-94
 ghumsate-70
 ghudukka-97
 ghoṇ-71
 ghunṇate-68
 ghoṇ-42
 ghūrṇ-71
 ghūrṇati-50
 ghūrṇate-50
 ghr-42, 160
 ghr̥ṇa-106
 ghr̥ṇate-68
 ghr̥ṣ-43
 ghr̥ṣati-70
 ghr̥ṣu-96
 ghr̥ṣa-65
 *ghr̥ṣva-96
 ghoṭaka-156
 ghoṣati-40
 ghoṣate-50
 ghr̥ā-42
 ghr̥āti-56
 caku-29
 cakora-122
 cakkam-29, 29
 cakram-29
 cakri-104
 caka-42
 cakksati-50
 caksate-50
 caksas-116
 caksus--117

caikramaṇa 117
 caccāra-97
 caṭ-68
 caṭ-42, 72, 159
 catortha-110
 caturvaya-110
 cad-72, 159
 can-159
 cand-43
 capala-115
 cam-82
 camū-105
 cayat-56
 caraṭa-122
 carati-50
 carate-50
 caṭāmi-92
 caretī-83
 carh-43, 73
 carv-43, 64, 72
 carvati-64
 carsṇi-107
 cala-86, 98
 calai-96, 98, 99
 calati-50, 98
 calate-50
 calyati-98, 99, 101
 calyate-99, 101
 calla-88, 101
 callai-96, 98, 99
 caha-97
 cāudasa-143
 cāy-42
 cāritra-117
 cārṇ-107, 115
 cāvulasa-76, 115
 ci-42, 61
 cikit-103
 cikitvit-107
 ciketi-77
 cikhyāpayisā-117

ciṭha-86
 cit-61, 79
 citra-115
 citha-86
 cinat-142
 cināti-84
 cinute-50
 cinoti-50, 56, 84
 cint-51
 -nominal forms of, 130
 cintati-142
 cintayati-50, 142
 cintayate-50
 cintām kr-142
 ciraṇṭhi-147
 ciranḍhi-147
 cṇ-68, 72
 cūṭ-68
 cud-72
 cunṭ-68, 72
 cund
 cund-159
 cumb-159, 160
 cumbati-50
 cumbate-50
 cumbaṇe-160
 cūrṇ-158, 159
 cūs-43
 cṛt-42, 68
 cetati-50, 77
 cetana-113
 ceti-56
 cetante-50
 cestati-46, 50
 cestate-46, 50
 codati-50
 codate-50
 codita-91
 codeti-91
 cyavati-48, 50

cyavate-48, 50
 cbaṇa-87
 chattrākam-120
 chad-42, 43, 79
 chadi-117
 chadis-117
 chand-42, 79
 chard-43
 chardati-69
 chardi-117
 chardis-117
 chādayati-50
 chādayate-50
 chid-42, 64
 chindaki-81
 chindati-84
 chinṇāmi-78
 chṛṇṇati-46, 69
 chṛṇṇati-69
 chṛṇṇati-69
 chṛṇṇti-46
 cho-42
 chṇṇita-69
 choḍayati-69
 jamh-60
 jakṣ-78
 jaghāna-79
 jaghāsa-79
 jaj-43, 169
 jajanti-56
 jajjh-60
 jajj-159
 jajjapūka-113
 jajila-122
 janai-95
 jan-42, 42, 56
 -nominal forms of, 130
 janati-50, 36, 93

janate-50
 janayām akar-142
 jani-114
 janitavya-109
 janita-92
 janitra-117
 janitva-112
 janitvana-109
 janisva-66
 japati-46, 51
 japate-46, 51
 jabh-43
 jambh-42
 jambhate-71
 jayati-51
 jayate-51
 jayanta-116
 jayiṣṇu-114
 jar-62
 jaraṭha-122
 jaraṇḍa-116
 jarati-56
 jarūtha-106, 118
 jarch-72
 jarjh-72
 jalpati-47, 50
 jalpate-47, 50
 jalpāka-113
 javār-31
 jas-42
 jahāmi-83
 jāgar-61
 jāgāuka-105, 113
 jāgr-42
 jāgrvi-107, 115
 jāṇati-93
 jān-Nominal forms
 of, 130

jāna-88
 jānati-50
 jānate-50
 jānā-88, 88
 jānāti-51, 84
 jānīte-51
 jāyati-50
 jāyate-50, 56
 ji-42, 159,
 jia-94
 jighnati-52
 jighnate-52, 59
 jighra-98
 jigbrati-56
 jiṇṇu-92
 jina-88
 jināti-50, 83, 88
 jinoti-64
 jinv-42, 159
 jinvati-60, 64
 jinvate-50
 jima-94
 jiṣ-160
 jiṣṇv108
 jīa-54
 jīyate-50
 jiryati-50, 56
 jiryate-50
 jiv-42
 jivati-47, 50
 jivātu-116
 jivitu-116
 jnd-158
 jurati-56
 juṣ-42
 juṣati-48, 50
 juṣate-48, 50
 jnhute-54

juhōtl-53, 83.
 jū-42
 jūr-42
 jūrni-106
 jūryatl-56
 jūrv-42
 jūha-87
 jr-56
 jrm̃bhati-48, 51
 jrm̃bhate-48, 51, 71
 jr-42
 jetva-112
 jem-79
 joh-78
 jaitra-105
 josa-103
 joha-87.
 jñap-42
 jñā-42, 159
 jñātl-105
 jyotati-50
 jyotate-50
 jyotis-24, 104
 jyotsnā-121
 jri-42, 159
 jvar-42
 jval-42
 jvalatl-47, 50
 jvalate-47, 50
 jalatl-71
 jvnlati-71
 jhāal-96
 jama-69
 dayate-69
 dasa-69
 diyate-69
 dhaṇḍalla-97
 dhaṇḍulla-97
 dhaṇḍhola-97

dhaṇḍholla-97
 dhapa-100
 dhappa-100
 dhava-100
 ḡai-96
 ṇicchalla-97
 ṇicchola-97
 ṇolla-97
 tams-42
 tak-65
 takva-107
 takṣ-159
 takṣan-103, 114
 takṣṇuvanti-57
 taṅg-43
 taṅgati-70
 taṅc-42, 159
 taṭati-69
 taṭāka-120
 taṭṭu-135
 tad-135, 136
 taḍa-97
 taḍati-69
 taṇḍula-107
 taṇḍulāḥ 135
 tatratya-123
 tathā jirā-165
 tan-class of, 39, 40, 42
 tanayltnu-105
 tanute-51
 tanotl-51, 83
 tantu-116
 tand-42, 60
 tap-42
 tapati-51, 65
 tapate-51
 tapas-104
 tapyati-51

tapyate-51
 tam-42, 65
 tar-65
 tarati-51, 57
 tarate-51
 tarisa-121
 tarute-50, 57
 tarusa-121
 tarusa-107
 tark-43
 tarkayati-50
 tarkayate-50
 tarj-43
 tarjati-50
 tarjate-50
 tard-42
 tardati-69
 tarpanti-57
 torṣula-115
 talumbu-135
 tavastara-109
 taviṣa-107
 tas-159
 tasai-96
 taspiṁ-148
 tasmic-148
 tā!u-135
 tada-135
 tāḍhl-69
 tāpayiṣṇu-108
 tāmyati-47, 50
 tāmyate-47, 50
 tāy-159
 tāla-135
 tāṣṭl-57
 tig-72
 tigma-106, 115
 tij-159
 tiṭṭha-86, 86
 tin-83

tiṇa-83
 titarti-50, 57
 tip-79
 tirati-50, 57
 tirate-50
 tirohḥūyate-80
 tiryakkṛtya-80
 til-160
 tiṣṭha-98
 tiṣṭhati-53
 tiṣṭhate-53
 tīkṣṇa-108
 tīrtha-118
 tīryati-57
 tu-42
 tuc-42
 tuj-43
 tujat-57
 tuñj-42, 159
 tuñjate-50, 57
 tuñjanti-50
 tuñjamāna-57
 tuṣ-72
 tuḍ-72
 tuṇḍa-150
 tutorti-57
 tud- class of, 39, 40
 42, 64
 tudati-47, 50, 83, 94
 tudate-47, 50
 tund-42
 tup-43
 tūph-72
 tubh-72
 tūmp-43, 72
 tumb-72
 turati-50, 57
 turate-50
 turiya-108

turb-73
 turyāma-57
 tūrva-42, 73
 turvani-107
 tul-43
 tuś-42, 60, 62
 tuṣ-42
 tusyati-47, 50
 tūgyate-47, 50
 tūr-42
 tūrni-106
 tṛ-79
 tṛṇa-83
 tṛṇatti-50, 69, 150
 tṛṇasa-121
 tṛd-42, 65, 136, 150
 tṛdati-69
 tṛntte-50, 150
 tṛnda-150
 tṛp-42, 159
 tṛpālu-122, 128
 tṛpnoti-57
 tṛpyati-47, 50, 57
 tṛpyate-47, 50
 tṛmp-42, 57
 tṛmpati-57
 tṛṣ-42
 tṛṣa-117
 tṛṣā-113, 117
 tṛṣu-113
 tṛ-42
 tej-42, 159
 tejasvin-120
 tep-79
 tailīna-121
 tojati-57
 tyajati-47, 50
 tyajate-47, 50
 traṅgati-70

trap-42
 trapa-86
 trapati-48, 50
 trapate-48, 50
 trayodasa-76
 tras-42, 65, 160
 trasati-47, 50
 trasate-47, 50
 tra-65
 trima-121
 truṣ-43, 60
 truḍ-60
 treta-109
 *trems-78
 trai-42, 159
 traldasa-76
 tvak-65
 tvaks-42, 43, 159
 tvaṅg-62
 tvaṅgati-70
 tvac-42
 tvar-42
 tvarati-48, 50
 tvarate-48, 50
 tvis-42, 43
 tsar-42
 thunāti-84
 thunoti-84
 thurv-42
 damś-42, 69
 damśtra-105
 damśtrā-117, 146
 damśtrikā-147
 dākka-86
 daks-42, 159, 159
 daksati-50
 daksate-50
 dakha-86
 dagh-42, 159

daṅgh-159
 daṭṭhā-146, 147
 datte-51
 dad-57, 61, 159
 dadati-51, 57, 83
 dadate-51
 dadarsa-79
 dadāti-51, 57, 83
 dadh-57
 dadhati-57, 83
 dadhāti-51, 57
 dadhāsi-83
 dadhṛsa-103
 dadhṛsi-104
 daḥ-60, 62
 dautura-122
 danturā-146
 dandaśūka-113
 dam-42, 60
 dambh-42
 day-42, 159
 daridrā-42, 80
 darman-106
 darvi-107
 darsata-103
 dal-43
 dalati-65
 daś-65, 69
 daśati-51
 daśate-51
 das-42, 65, 159
 dasyu-107
 dassita-91
 dasseti-91
 dah-42
 dah-ta-149
 dahati-47, 51, 57
 dahate-47, 51
 dahāsi-83

dabyati-57
 dā-42, 43, 57, 61, 64
 159
 dākha-86
 dāṭhā-146, 147
 dāḍhiā-147
 dāḍhikā-147
 dāti-57
 dāoa-104, 117
 dānu-106
 dāfaniya-112
 dāpita-91
 dāman-114
 dāy-61, 114
 dāyamāna-57
 dāva-103
 dāvane-77
 dās-42, 57, 159
 dāsati-57
 dāsaratha-119
 dāsnoti-57
 dāsva-115
 dāsti-57
 das-42, 78, 159
 dāseraka-122
 diggha-140
 dita-151
 ditae-144
 ditaga-144
 ditanti-151
 ditama-151
 ditetha-151
 ditemi-151
 ditesi-151
 didṛksenya-112
 dideṣu-57
 dinv-159
 dip-nominal forms of,
 130
 dibhati-83

diyase-50
 div-class of, 39, 40,
 —42, 43, 101, 159
 diś-43
 diśatā-118
 diśati-47, 50, 51, 57
 diśate-47, 50, 51
 diśyati-57
 di-42
 dik-43, 78
 *diggha-140
 digha-140
 didivi-115
 didē-78
 didyati-50
 didyate-50
 didhi-42
 didhī-78
 dip-43
 dipyati-48, 51
 dipyati-48, 51
 diyati-50, 69
 dirgha-140
 divyati-51, 77
 divyate-47, 51
 diha-140
 du-43
 dugdhe-51
 dudh-60
 durb-73
 durv-73
 dul-43
 duvas-77
 dus-43
 duṣyati-47, 51
 duṣyate-47, 51
 (sūre) duhitā-24
 duhet-57
 duhyati-50, 57

- duhyate-50
 dū-43
 dūraka-109
 dṛ-160
 dṛmh-42, 79, 159
 dṛmhati-50, 65
 dṛmhate-50
 dṛhh-42, 160
 dṛś-43, 99
 dṛśī-118
 dṛśika-120
 dṛśiku-120
 dṛśenya-108
 dṛśvan-114
 dṛh-42, 79, 159
 dekkha-92
 dekha-86
 denati-93
 deya-109
 devatāt-109
 devatāti-169
 devati-51
 devate-51
 deśya-111
 deśṇa-108
 deha-117
 daivya-110
 do-42
 dogdha-149
 dogdhi-51, 57
 doghda-149
 dyati-64
 dyut-43, 103
 dynma-117
 dyotati-48, 51
 dyotate-24, 48, 51, 77
 dram-43
 dravati-51, 77
 dravate-51
 drā-42
 drākh-72
 drāgh-43, 72, 159, 162, 163
 drāghayati-162
 drāghita-162
 drāghiman-162
 drāghīṣṭha-162
 drāghman-162
 dru-43
 druvaya-110, 120
 druh-43
 druhyati-47, 51, 77
 drnhyate-47, 51
 drek-159
 dvandva-24
 dvigunākṛ-80
 dvita-109
 dvitiya-108
 dvidhābhūta-80
 dviṣ-43
 dviṣati-51
 dviṣate-51
 dviṣṭe-51
 dvesti-51
 dhakṣi-57
 dhatte-51
 dhan-42, 77
 dham-42, 60
 dhama-98
 dhamati-47, 51
 dhamate, 47, 51
 dhamani-116
 dhamanī-116
 dharma-118
 dharsati-57
 dhā-43, 57, 100
 dhāti-57
 dhāpayati-100
 dhāpayate-100
 dhāpyate-100
 dhāyeta-57
 dhāru-115
 *dhāla-86
 dhāvati-51
 dhāvate-51
 dhinv-65, 159
 dhī-43, 79
 dhunāti-84
 dbunnte-51
 dhunoti-51, 84
 dhurb-73
 dhurv-73
 dhūti-105
 dhūnnte-51
 dhūnoti-51
 dhūmin-106, 110
 dhūmra-110, 122
 dhūrv-42
 dhr-43
 dhṛj-72
 dhṛñj-72
 dhṛṣ-43, 57
 dhṛṣṇat-57
 dhṛṣṇoti-57
 dhe-43
 dhenu-106, 114
 dhor-43
 dhmā-43
 dhyā-79
 dhyāyati-47, 51
 dhyāyate-47, 51
 dhyai-43
 dhraj-42, 72
 dhrañj-72

- dhram-43
 dhruṭ-77
 dhrek-159
 dhvams-43
 dhvamsati-51
 dhvamsate-51
 dhvaj-43
 dhvan-42, 43
 dhvṛ-42, 159
 nakṣ-42
 nakṣati-50
 nakṣate-50
 magna-106
 naṭ-43
 naṭati-69
 nadati-47, 51
 nadate-47, 51
 nadi-104
 nand-64
 nandati-47, 51
 nandate-47, 51
 nahh-42
 nam-43
 namati-51
 namate-51
 namaskaroti-80
 naṣ-43
 nayati-51
 nayate-51
 nardati-47, 51
 nardate-47, 51
 nal-62
 navati-50
 navate-50, 57, 77
 navā-108
 naṣati-50
 naṣate-50
 naṣyati-47, 51
 naṣyate-47, 51
 nahns-105
 nahyati-51
 nahyate-51
 nā-class of 39
 nāth-43, 72, 159
 nāthati-48, 51
 nāthate-48, 51
 nādh-43, 72, 159
 nābhila-122
 nāman-106
 nāla-25
 nālikera-122
 nims-42, 159, 160
 niks-78, 159, 160
 nikhalyati-93
 nigīrṇavān-151
 nighaṇṭu-147
 nid-61
 ninya-121
 nitya-123
 nind-43
 nindati-47, 51
 nindate-47, 51
 ninv-160
 nipesapīta-91
 nimna-110, 117
 niyati-93
 nivacanekṛ-80
 nivat-110
 nisītha-118
 nigoha-145
 nu-class of, -39
 -43, 65, 159, 161
 nud-43, 64, 158
 nudati-51, 77
 nndate-51
 nnvāti-57
 nū-159, 161
 nūtana-109
 nṛt-43
 nṛtati-69
 nṛtyati-47, 51, 69
 nṛtyate-47, 51
 nṛmṇa-117
 ne-86
 netar-105
 nedati-47, 50
 nedate-47, 50
 nauti-57
 pakamamīna-90
 pakamī-na-90
 pakva-115
 pac-43
 pacataki-81
 pacati-51
 pacate-51
 paj-61
 paja-87
 pañcama-110
 paṭ-43
 paṭipajetha-89
 paṭipoga-145
 paṭh-43
 paṭhati-47, 51, 71
 paṭhate-47-51
 paṇ-43, 159, 161,
 paṇati-48, 51
 paṇate-48 51
 paṇāyati-112
 paṇāyā-112
 paṇḍita-148
 paṇdu-149
 pat-43
 patage-122

patati-47, 51
 patate-47-51
 patatra-117
 patayālu-107, 122
 patākā-113
 patti-116
 patnī-110
 pad-43
 padāti-116
 padyati-48, 50
 padyate-48, 50
 °padva-115
 pan-159, 161
 papoti-84
 pay-44
 payate-57
 payai-96
 par-61, 65
 parakramate-89
 paramaprasāda-80
 paramaprasādayām
 āsā-80
 pari(rā)k(a)mate-89
 parinīyanti-93
 paribhottuyam-97
 parusa-108
 parusnī-110
 parka-142
 parthati-71
 parihate-71
 pard-44
 parpharika-105
 parh-73
 parv-73
 parvatiya-108
 pal-44
 palakamamīna-90

palāy-79
 palinata^o-92
 palpūi-61
 Paśuraksi-114
 paśuraksiṇ-114
 paśyati-51, 79
 paśyate-51
 passa-86
 pā-43, 57, 61, 65
 pāmsura-110
 pāṭayāmāno-92
 pāṇḍu-148
 pāṇḍura-148
 pāti-57
 pāpūnāti-84
 pāpūnāta (ti)-87.
 pāpūnāti-87
 pāpovā-87
 pāyamīnā-90
 pārāyati-99
 pārśvatiya-120
 pālayati-99
 pāvaka-103
 pims-76
 pimsāti-50
 pimsate-50
 pimsē-50
 pimsṭa-148
 piechila-122
 piñi-44
 piṇaddhai-95
 piṇaddhāvai-95
 piṇḍa-148, 149
 piṭṛvya-111, 123
 pinasṭi-50
 pinv-42, 57, 65, 160
 pinvat-57

pīnvati-50
 pinvate-50
 pipatu-50, 57
 piparti-57
 pipite-50
 piprakṣu-113
 piba-98
 pibati-51, 57
 pibate-51
 pibd-661
 piyāna-57
 pis-42, 148, 160
 piśaṅga-122
 piśuna-118
 piś-43
 piśai-96
 pī-43, 61
 pīḍ-43, 99
 piḍayati-98
 pīpihi-57
 piyūṣa-107
 pil-99
 pīḍei-98
 pīva-115
 pīvan-107
 piśa-76
 puṣjām-142
 puñcām-142
 puṇjām-142
 puṭ-44
 puṭāti-69
 puṇḍarika-120
 puṇāti-51, 88
 puṇite-51
 purāṇa-110
 puriṣa-121
 purutama-109

puruṣatvatā-109	pr̥ncam cakāra-142	prath-43
purohita-116	pr̥ncam cakre-142	prathati-51
purohiti-116	pr̥ncām-142	prathate-51
puṣman-148	pr̥ncām karōtu-142	pravat-123
puṣ-43	pr̥ncām kṛ-142	pravadiṣu 113
puṣp-44, 106, 121, 148	pr̥n-57, 79, 149	pravāhika-118
puṣyati-47, 51	pr̥nakti-51, 141	praśna-118
puṣyate-47, 51	pr̥nati-50, 57	pras-44
pusa-87	pr̥nate-50	prasanna-90
pū-43	pr̥nāti-57, 79	prā-42
pūcu-141	pr̥nuyāt-57	prādurbahhu-80
pūjaya-142	pr̥nta-149	prādhvani kṛtya-80
pūjayati-141, 142, 143	pr̥nda-149	prāpuṣati-87,
146	pr̥taua-69	priya-103
pūjā-141, 143	pr̥thati-71	prihitosmi-151
pūjām-142, 142	pr̥thu-105	pri-43
pūjāmkr-142	pr̥-160	priṇāti-51
pūni-116	pr̥-42	priṇte-51
pūy-42	pekkha-99	priyati-51
pūyati-47, 50	pekkhāmi-92	priyate-51
pūyate-47, 50	pacelima-112	pru-42, 65
pūr-42	peccha-99	pruṣ-160
pūrṇa-149	peru-107	pruṣate-51
pūryāmāṇa-57	pev-63, 66	pruṣauvanti-51
pūs-159	peṣseti-92	prekṣ-99
pūsū-141	pea-82	pres-82
pr-44, 57, 149, 159	pesati-70	presate-70
pr̥kṣa-107	pesita-91	proth-42
pr̥kṣte-51	peseti-91	plavati-48, 51
pr̥c-42, 142	paiu-158	plavate-48, 51
pr̥cch-79	pyā-65	plu-43, 65
pr̥cchati-51	pyāy-43, 57, 159	pluṣ-44, 160
pr̥cchate-51	pyai-57, 159	psā-77
pr̥nca-142	pracalāka-113	phar-nominal forms of
pr̥ncati-141	pracch-43	130
pr̥ncani-142	pratna-109	phal-44
pr̥ncam akar-142		phalati-51, 65

- phalate-51
 phalūkṛ-80
 phuṭṭa-90
 pbul-61
 pbusita-90
 baṁh-44, 159
 badb-43, 61
 badhnāti-51
 badbūte-51
 bandb-44, 61
 bandbu-118
 baodhutā-109
 haodbula-122
 babhūva-79
 babhrusa-121
 barb-73
 barv-73
 barb-42
 barbiṇa-121
 badūlā-122
 babophalaka-31
 babolā-122
 bādb-43
 bādbati-49, 51
 bād hate-49, 51
 biod-160
 bibhayām cakāra-142
 bibharti-58
 bibheti-51
 bimbāva-121
 biṣ-158
 bukk-44
 huddai-69
 budyati-69
 boddbeyam-78
 budb-43
 bodbna-106
 budhyati-49, 51
 budbyate-49, 51
 bobhksā-117
 brb-42, 159
 brmh-42, 159
 brmbati-51, 65
 brmbate-51
 bogalo-138
 bogolu-138
 boḍayati-69
 bodbati-51
 bodhate-51
 bob-138
 bobba-138
 bobbe-138
 bol-138
 bolayati-69
 bolne-138
 bolja-97, 138
 braviti-52, 79
 brahmanyā-120
 brū-43, 138
 brūte-52
 bhāks-44
 bhakṣati-51
 bhakṣate-51
 bbaj-43
 bbajati-52
 bbajate-52
 bhajenya-112
 bhañj-43
 hhañjati-84
 bbaṣ-68
 bhaṇ-43, 161
 bbaṇati-70, 71
 bbaṇāti-92
 bhaṇāti-116
 hbaṇ-44, 160
 bbaṇ-42, 61, 161
 bbaoati-70
 hband-42, 160
 bbandhati-84
 bhayate-51
 bbar-65
 bbara-117
 bharata-103
 bharati-52, 58
 bharate-52
 bhari-44
 bharti-58
 bharts-43
 bharb-73
 bharman-117
 bharv-42, 64, 73
 bharvati-64
 bhal-159
 bhall-159
 bhavati-47, 52
 bbavate-47, 52
 bhasati-51
 bhasate-51
 bha-64, 77
 bhasala-115
 bhā-43, 83
 bbāti-77
 bhānn-114
 bbāmin-106
 bhāra-117
 hbāvoka-113
 bbāsati-49, 51
 bsāsate-49, 51
 bhās-43, 65
 bbāsati-47, 52, 77
 bhāsate-47, 52

- bhāsura-115
 bhikṣ-43, 78
 bhikṣati-49, 52
 bhikṣate 49, 52
 bhikṣāka-113
 bhikṣusya-13
 bhid-43, 64
 bhidelīma-112
 bhinatti-47, 52
 bhintte-47, 52
 bhindati-84
 bhinna-106
 bhīṣaj-42, 61
 bhīsa-94, 96
 beī-43, 160
 bhīma-115
 bhīru-115
 bhūṅkte-79
 bhūṅktvā-79
 bhūṅksita-79
 bhūj-43, 159
 bhujaga-122
 bhujjita-92
 bhujjitāhi-92
 bhujman-106
 bhūmja-87
 bquṅjati-52, 84
 bhūṅjate-52
 bhūmjamāna-89
 bhūmjamāno-92
 bhūmjitaya-92
 bhuttam-92
 bhar-61, 65
 bhuraj-61, 62
 bhū-class of 39, 40
 -43
 bhūmau-117
 bhūmi-118
 bhūri-107, 115
 bbūs-42, 44
 bhr-43
 bhrjati-47
 bhrjate-47
 bhr̥t-68
 bhedya-112
 bheṣ-160
 bho-86
 bhoti-92
 bhonti-92
 bhoplā-31
 bhyas-42, 65, 160
 bhramṣ-43
 bhramṣati-49, 51
 bhramṣate-49, 51
 bhrāj-43
 bhranati-71
 bhrām-43
 bhramati-47, 52
 bhramate-47, 52
 bhramara-115
 bhrāj-43
 bhrājati-52
 bhrājate-52
 bhrāṭṭvya-111
 bhrās-44
 bhri-42, 62, 160
 bhr̥ṣ-42
 bhr̥ṣati-49, 51
 bhr̥ṣate-49, 51
 mamb-42, 159
 maka-145, 145
 māṅktvā-79
 mac-44
 majj-43, 61
 majjati-47, 52
 majjate-47, 52
 mānc-44, 159
 man-61, 137
 man-147
 maṇḍ-147
 maṇḍa-148
 maṇḍati-52, 70, 137
 maṇḍate-52, 146, 147
 maṇḍayati-137
 maṇḍita-148
 maṇḍūra-148
 maṇḍe-146, 148
 mata-90
 mati-105
 matsara-107, 121
 matsi-58
 mathati-52
 mathate-52
 mathnāti-47, 51
 mathuīte-47, 51
 mad-43, 64, 79
 mada-64
 madati-51, 58, 64
 madate-51
 madana-104
 madira-115
 madhbhū-80
 mau-43
 mana-87
 māṇa-87
 manati-51
 manate-51
 manana-117
 maṇas-116
 maṇasikṛtya-80
 mantra-117
 manth-43
 manthati-47, 51
 manthate-47, 51

- mand-42, 64, 79, 159, 161
 mandati, 51, 70, 137
 mandate-51
 mandara-122
 mann-nominal forms of, 130
 manyati-49, 52
 manyate-49, 52
 manyu-107
 mamatā-109
 mamatsi-58
 mamāna-87, 87
 mamāna-87
 mamānate-89
 mamānate-90
 mamābhīsa-97
 may-42
 marate-51
 maranti-51
 marc-42
 mardati-52, 65
 mardate-52
 mardayati-65
 marh-73
 marv-73
 malina-121
 mahan-103
 mahāputriya-80
 mā-42, 43, 82
 mādam-137
 mādū-137
 māndn-148
 mātrā-117
 mādyati-58
 mādhuri-121
 mānate-89
 māmaka-109
 māyate-58
 māyāvin-120
 māruta-108
 mārg-78
 mārgali-52
 mārgate-52
 mārsīl-52, 79
 mārsītvā-79
 mālige-137
 māśika-120
 māśina-121
 mī-43, 58
 migh-61
 mīt-103
 mid-160
 mināti-51, 58, 84
 minnte-47, 51
 minūtas-58
 minoti-47, 51, 58
 mind-160
 minv-160
 mil-44, mliev-67
 miṣ-43, 160
 miṣati-47, 52
 miṣate-47, 52
 mīh-43, 160
 mī-43, 58
 mīl-43
 mīlāti-47, 51, 71
 mīlate-47, 51
 miv-42
 muai-96
 mukhatiya-120
 mukhara-122
 muj-44
 muñc-43
 muñcati-52, 84
 muñcate-52
 muñj-44
 muṇṭh-159
 muṇḍa-148
 mud-43, 64
 manāti-84
 munoti-84
 murb-73
 murv-73
 multan-170
 mas-43
 muṣkara-110
 musala-107
 muhyati-47, 52
 muhyate-47, 52
 mū-44
 mūalla-97
 mūrch-43
 mūlathann-170
 mṛ-43
 mṛinṣa-148
 mṛinṣe-146, 148
 mṛkṣ-42, 44, 72
 mṛg-44
 mṛgayu-113
 mṛnṅke-146
 mṛj-43
 mṛñj-44
 mṛñjata-146
 mṛñje-146
 mṛd-43, 70, 137
 mṛdayākn-104
 mṛdika-105
 mṛṇ-42
 mṛnāti-65
 mṛtyu-118

- mrd-43, 65, 70, 72,
 137
 mrdati-51
 mrdase-51
 mrdnāti-51
 mrdūte-51
 mrdh-42
 mrdhas-104
 mrd-70, 137
 mṛś-43, 65
 mṛśati-52
 mṛśate-52
 mṛś-43, 160
 mṛśta-65
 mṛśte-52
 mṛśyati-49, 52
 mṛśyate-49, 52
 mekhalā-121
 mejh-137
 meṣati-70
 meth-42
 methati-51; methate-
 51
 methi-106, 118
 med-42
 medhāvī-120
 medhira-122
 meṇa-87
 meni-106
 mev-66, 67
 mehati-47, 52
 mebate-47, 52
 moda-64
 modati-49, 52, 64
 modate-49, 52
 myakṣ-61
 mrakṣ-72
- mrad-72
 mredati-70
 mlāyati-47, 52
 mlāyate-47, 52
 mlecc-159
 mleṣati-70
 mlev-66
 mlai-43
 yakṣ-42
 yacchati-52
 yacchate-52
 yaj-159
 yajati-52
 yajate-52
 yajus-117
 yajña-118, 141
 yajvan-114
 yajvin-120
 yat-43
 yatati-52
 yatate-52
 yatua-118
 yautr-117, 159
 yabh-42
 yam-43
 yamati-52
 yamate-52
 yaśasvī-111, 120
 yas-43
 yā-class of, 39, 83, 86,
 87
 yāc-43
 yācati-52
 yācate-52
 yācū-118
 yāti-52
 yād-61
- yāma-118
 yāmaki-81
 yāmahe-52
 yāyajūka-113
 yu-43, 58
 yucchati-58
 yuch-58
 yuj-43
 yuja-87
 yuñjati-52, 84
 yuñjate-52
 yute-51
 yuddha-24
 yudh-43
 yudhi-118
 yudhyati-52
 yudhyate-52
 yunakti-52
 yunāti-58
 yunakte-52
 yuyoti-58
 yuvati-51, 58, 116
 yuvatn-51
 yuvaśa-111
 yuha-87
 yeṣ-42, 78
 yojana-117
 yauti-51, 58
 yauvaniya-120
 ramb-42
 ramhati-51
 ramhatn-51
 rakṣ-43, 159
 rakṣati-52
 rakṣate-52
 rañkh-72
 rañg-44
 rañb-44, 61, 72

rac-44
 raj-43
 rajati-52
 rajate-52
 rajasvala-122
 rajyati-51
 rajyate-51
 ratu-29
 rath-29
 ratna-105
 rathira-122
 rathyā-120
 rad-42
 radati-51
 radate-51
 radh-42
 rante-56
 randh-42
 rap-42
 raps-61
 raph-42
 rabh-43, 64
 rabhati-49, 52
 rabhate-49, 52
 ram-43, 58
 ramati-52
 ramate-52, 58
 ramṇāti-58
 rambb-42
 rambbhati-52
 rambbhate-52
 raya-145
 rarate-58
 ravati-52
 ravate-52
 ras-43
 rasa-160

rasati-52
 rasate-52
 rasabha-122
 rasi-58
 rah-44
 rā-58, 159
 rāgh-159, 162
 rāghate-163
 rāj-43
 rājati-47, 52
 rājate-47, 52
 rājan-103
 rājasūya-118
 rāt-29
 rāte-29
 rātri-105
 rādh-43, 159
 rādhyati-52
 rādhyate-52
 rās-58, 78
 rāsati-52
 rāsate-52, 58
 rikh-42
 riñkte-47
 riñkh-44
 riñg-44
 ric-42
 riñcati-84
 riñchati-122
 riñakti-47
 riñāti-51
 riñāte-51
 riñyati-52
 riñyate-52
 rip-61
 riph-159, 159
 ribbai-96

riñhi-58
 ris-42
 riṣyati-47, 52
 riṣyate-47, 52
 rih-42
 ru-43, 65
 roc-43, 65
 rucate-92
 ruccati-92
 ruj-43
 rujati-47, 52
 rujate-47, 52
 ruñjhati-83, 84
 ruth-62, 160
 ruṇadhi-52
 rud-43, 58, 64
 rudati-52, 58
 rudate-52
 rudh-class of, 39,
 40, 43
 runddhe-52
 rundhati-52, 83, 84
 rundhate-52
 rup-42
 rus-44
 rus-42, 44
 rusyati-52
 rusyate-52
 ruh-43
 ruhati-52
 ruhate-52
 rej-42
 reḍ-61
 reṇu-114
 retas-105, 117
 rebb-43
 rerih-103

- revath-118
 res-159
 rai-42
 raial-95
 rahāval-95
 rocati-49, 52
 rocate-49, 52, 92
 rocana-113
 roda-64
 rodati-52, 53, 64
 rodate-52
 roditi-58
 ropapita-91, 91
 ropi-104
 rorndā-117
 roṣ-42
 rohati-52
 rohate-52
 rohiṇi-110
 rohita-110
 raudra-121
 lakkhā-140
 laks-78
 laksati-52, 57
 laksate-52
 lag-44
 lagha-86
 laṅgh-61
 laṅghati-52, 71
 laṅghate-52
 laṅgh-43
 lajjati-52
 lajjate-52
 lajjā-117
 laṭ-72
 laḍ-72
 lap-43
 lapati-47, 52
 lapate-47, 52
 labdha-101
 labb-43
 labhati-49, 53
 labbate-49, 53
 labbyate-101
 lam-61
 lamb-43
 lambati-49, 53
 lambate-49, 53
 lambhuka-113
 larb-73
 larv-73
 lalati-53
 lalate-53
 lavanikr-80
 laṣ-44
 laṣati-53
 laṣate-53
 las-44
 lasati-53
 lasate-53
 labu-145
 lahuka-145
 *lakkhā-140
 lākṣā-140
 lākh-72
 lākhā-140
 lāgb-72, 159, 162
 lāghate-163
 lādhaṇē-101
 lāhh-158
 lābbṇē-101
 Hal-96
 lik-72
 likha-87
 likhati-47, 51
 likbate-47, 51
 likbapitu-90
 likhāpāpita-91
 likhāpita-91
 likhlta-91
 lhi-145
 limp-43
 limpati-47, 52
 limpate-47, 52
 liś-42
 lisal-96
 lih-43
 llyati-93
 lī-43, 82
 liḍhe-47, 53
 liyati-49, 53
 liyate-49, 53
 lual-96
 luñc-44
 luṇ-79
 luṭh-160
 luṭhati-53
 luṭhate-53
 luḍ-79
 luṇṭāka-113
 lup-43
 lubb-43, 58
 lubhai-96
 lubhati-58
 lubhyati-58
 lumpati-47, 52
 lmpate-47, 52
 lui-44
 lekhlta-91
 leḍhl-47, 53
 lok-43, 78
 loc-43

- lopāpita-91,
 lopita-91
 lobhase-58
 lomaśa-121
 loha-145
 vaktrasaṃyoga-160
 vaguḷi-138
 vaggaho-29
 vagvana-107
 vagvaou-107
 vaṅk-72
 vaṅkri-115
 vaṅg-44, 72
 vac-43
 vacas-116
 vañc-43
 vañcati-47
 vañcate-47
 vaṇṭ-72
 vaṇḍ-72
 vaṇḍha-86
 vat-61
 vata-86,
 vatsatara-109
 vad-43
 vada-86
 vadati-52, 65
 vadate-52
 vadb-43, 98
 vadhū-105
 van-42, 58, 159
 vanati-51, 58
 vanate-51
 vanāti-58
 vanute-51
 vanoti-51, 58
 vamtade-92
 vand-43, 159
 vandati-49, 53
 vandate-49, 53, 92
 vap-43
 vapati-52
 vapate-52
 vapsas-108
 vam-43
 vay-44
 vayati-48, 53
 vayate-48, 53
 vayuna-118
 varatrā-117
 varavas-117
 varīman-117
 varivas-117
 varivasyati-117
 varisṭha-104
 varutra-117
 varūtra-117
 varūttha-118
 vareṇya-112
 varṇ-158
 vartati-49, 52, 53
 vartate-49, 52, 53
 vartani-116
 vartitavya-112
 vartitum-112
 vartman-117
 varṣ-160
 varsati-48, 53
 varsate-48, 53
 varsuka-113
 val-44
 valati-53
 valate-53
 valabhi-25
 valg-43
 valgati-47, 53
 valgate-47, 53
 valhati-51
 valhate-51
 vavakṣi-58
 vaś-43
 vaśanti-58
 vaśaṭkaroti-80
 vaṣṭi-58
 vas-43, 58, 64
 vasa-86, 86,
 vasati-48, 53, 116
 vasate-48, 53
 vasas-104
 vasutā-109
 vastra-24, 117
 vah-43
 vaba-86
 vahati-52, 116
 vahatu-116
 vahate-52
 vahni-115
 vā-43, 65, 83
 *vāggaho-29
 vāgmin-120
 vāghu-29
 vācā-121
 vācāṣa-122
 vācāla-122
 vāci-121
 vāñch-43
 vātūla-122
 vāditra-117
 vāpi-118
 vāṇmaya-121
 vāyati-48, 53

- vāyate-48, 53
 vāvadūka-113
 vās-43
 vāsati-53
 vāsate-53
 vāsyati-49
 vāsyate-49
 vāsa-43
 vāsati-76
 vāsi-118
 vāṭayamāno-92
 vimsati-76
 vikara-114
 vikāra-114
 vikurv-79
 viksipa-114
 vic-43, 72
 vicch-79
 vicchadḍayamāno-92
 vij-43, 72, 160
 vijati-49, 53
 vijate-49, 53
 vijīnamana-89
 vijīnamāna-89
 vidhatta-100
 *vidhapai-100
 *vidhapta-100
 vidhappa-100
 vidhappai-100
 vidhapyate-100
 vidhava-100
 vidhavai-100
 vidhavijja-100
 vitta-112
 vith-62, 159
 vithura-115
 vid-43, 58
 vidagdba-114
 vidati-51, 53, 58, 83
 vidate-51, 53
 vidaha-145
 vidāka-113
 vidām kurvanti-142
 vidura-115
 vidusvin-120
 viddhai-95
 viddhijjal-95
 vidvala-107
 vidhati-49, 52
 vidhate-49, 52
 vidhe-96
 vidhyati-48, 53, 79
 vidhyate-48, 53
 vinad-142
 vindati-53, 142
 vindate-53
 vindh-42
 vip-43, 61
 vipatipādayamīne-90
 vimuca-114
 vill-82
 vivaṣṭi-58
 viś-43
 viśati-52
 viśate-52
 viś-42, 43, 158, 160, 161
 viśayibhū-80
 viśprāsa-114
 vihai-96,
 vi-43
 vijati-48, 53
 vijate-48, 53
 vid-61
 viḍayati-52
 viḍayate-52
 vithi-118
 vīratā-118
 vīreṇya-108
 vncati-93
 vutte-92
 vr-43
 vr̥mh-159
 vr̥ṇkte-52
 vr̥j-42
 vr̥ṇakti-52
 vr̥ṇāti-49, 53
 vr̥ṇite-49, 53
 vr̥ṇute-53,
 vr̥ṇoti-53,
 vr̥t-43
 vr̥dh-43, 159
 vr̥ṇḍāraka-122
 vr̥ṣ-160
 vr̥san-114
 vr̥śabha-110, 122
 vr̥śakapāyī-108
 vr̥ṣṇi-115
 vca-124
 veti-83
 vetti-58
 veth-159
 veda-124,
 vedate-58
 vedhas-116
 ven-42, 78
 vep-43, 61
 vepati-49, 53
 vepate-49, 53
 vepathu-106, 118
 velli-44

vellati-65
 veśman-117
 veṣṭ-43
 veh-44
 vai-43
 vaicitrī-121
 vocati-78
 vyath-43, 160
 vyathati-49, 53
 vyathate-49, 53
 vyadh-43
 vyay-44, 79
 vyayati-53,
 vyayate-53,
 vyāghrah-29
 vyutpad-100
 vraca-86
 vraj-43
 vrajati-48, 53
 vrajate-48, 53
 vrac-78
 vrad-61
 vras-43
 vrādh-61
 vrid-44
 vrud-62
 vruḍati-69
 vlagya-71
 vla(h)g-61, 71
 śamyu-113
 śams-43, 159
 śamsati-53
 śak-43
 śamsate-53
 śakema-93
 śakyati-84
 śakyate-84
 śagma-115

śāṅk-43
 śāṅkati-49, 53
 śāṅkate-49, 53
 śāṅcate-70
 śaṭhati-70
 śaṭhate-70
 śaṭhayati-70
 śaṭhayate-70
 śan-159
 śanati-71
 śat-61
 śatama-109
 śataikiya-120
 śatri-105
 śatru-106
 śad-62
 śapati-48, 53
 śapate-48, 53
 śabdāla-122
 śam-43
 śamant-58
 śamira-122
 śamiśva-58
 śamniṣe-58
 śamyati-58
 śayati-53
 śayate-53
 śarat-27
 śardhati-52
 śardhate-52
 śari-73
 śarv-73
 śalate-70
 śalākā-120
 śaśvata-121
 śas-43, 78
 śāktika-120

śākh-158, 161,
 śākhati-71
 śākhā-161,
 śāta-43
 śātayati-48, 52
 śātayate-48, 52
 śāmyati-53
 śāmyate-53
 śāmbapura-170,
 śāśvatika-120
 śā-43
 śāti-53
 śāte-53
 śi-159
 śikṣ-43, 78
 śikṣya-112
 śiṅghati-70
 śithira-24
 śithila-24
 śimiyati-58
 śileya-121
 śisāti-53
 śisite-53
 śi-43
 śik-44, 160
 śitalu-122
 śihh-44
 śiyati-49
 śiyate-49
 śukra-99
 śukla-99, 107, 115
 śuc-43
 śuci-114
 śuj-61, 62
 śuṇḍāra-122
 śudh-43, 65
 śudhyati-48, 53

- śudhyate-48, 53
 śundh-42
 śundhati-52
 śundhate-52
 śunh-65
 śubbri-115
 śusajāna-70
 śusāsana-117
 śus-43, 61
 śuska-105
 śusman-117
 śusyati-53
 śusyate-53
 śūna-118
 śūyate-70
 śūr-62
 śr-43
 śrīkhati-70
 śrīkhalā (7a)-121
 śrīkhanika-70
 śrīpāti-65
 śrīpate-53
 śrīpōti-53
 śrīdh-43
 śev-66
 śaileya-121
 śo-43-159
 śocati-53
 śocate-53
 śoci-104
 śobhati-53
 śobhate-53
 śauvastika-120
 ścam-62
 śoath-43, 44
 śinaśra-107
 śmīlati-71
 śyā-65
 śyāyati-48, 53
 śyāyate-48, 53
 śraṅk-72
 śraṅg-72
 śraṇ-159
 śraṇati-71
 śrath-24, 42
 śranth-42
 śram-43, 65
 śramati-53
 śramate-53
 śrayati-49, 53
 śrayate-49, 53
 śravas-104, 116
 śravāyya-108
 śrā-42
 śri-43
 śri-42
 śrināti-52
 śripīte-52
 śru-43
 śrūṇa-87
 śruyati-93
 śrotas-117
 śraṅk-72
 śraṅg-72
 śrathati-53
 śrathate-53
 ślākh-72, 158, 161,
 ślākhati-71
 ślāgh-72
 ślāghati-49
 ślāghate-49
 śliṣyati-48, 52
 śliṣyate-52
 śvaṅcate-70
 śvathayate-70
 śvathayate-70
 śvalati-70
 śvas-43
 śvasati-53
 śvasate-53
 śvā-65
 śvi-42
 śaṭha-110
 śanna-87
 śāhiv-43
 samvatsara-121
 sakkasi-84
 sakkāmi-84
 sakkunāti-84
 saktoti-84
 sagh-42
 samkhila-90
 samgrāma-159
 sakṣi-58
 sakṣin-104
 sac-42, 159, 160
 sacati-48, 52
 sacate-48, 52
 saj-42
 sajati-48, 52
 sajate-48, 52
 saṭ-160
 sad-43
 sadman-114
 sadvara-115
 san-42, 159
 sani-104
 santaka-116
 samthadai-95
 sap-42, 159
 sapati-52

sapate-52
 sapsara-107
 sabheya-109, 121
 samāna-90
 samudriya-120
 sampaṭipajam-90
 *sammaboru-170
 sara-27
 saraṇi-116
 sarsti-54
 sarate-54
 sarada-27
 sarasi-122
 sarpeti-48, 54
 sarpate-48, 54
 sarb-73
 srrv-73
 sarvatāti-119
 salila-115
 saśc-42
 saścasi-52
 saśce-52
 sas-92
 sab-43, 58
 sahsti-49, 54
 sahste-49, 54, 58
 sahyāmi-58
 sā-64, 65
 sād-42
 sādhati-52
 sād hate-52
 sānsi-104
 sāmidsui-108
 sāmoru-170, 170
 sāraṅga-122
 sāvapita-91
 sās-86

si-42, 61, 83
 simha-76
 siktha-118
 siñc-43
 siñcasti-53
 siñcate-53
 °sija-87
 siñi-159
 °siṭṭha-92
 sidh-43
 sidhysti-48, 54
 sidhyate-48, 54
 sinā-83
 siv-13, 61
 sisarti-77
 sidsati-48, 52
 sidate-48, 52
 sīdhura-122
 sīmau-117
 simā-118
 sīvysti-49, 52
 sīvyate-49, 52
 siha-76
 su, class of, 39, 40,
 43
 sukhaniya-112
 sugantva-112
 suc-65
 sujj-70
 snñāsi-84
 sunoti-83
 sunomi-84
 sutvan-114
 sunuts-53
 sunoti-53
 surāpītha-118
 surāmaṇḍa-148

suva(i)-52
 suvats-52
 susumsera-89
 susruata-89
 sū-42, 43, 158
 sūte-52
 sūd-43
 sūnā-118
 sūnu-114
 sūyati-49, 54
 sūyate-49, 54
 sūre (dubhitā)-24
 sūrka-42
 sūrmī-106
 sr-43, 72
 srj-43
 srjati-53, 77
 srjats-53
 srth-24
 srp-43
 srmara-115
 sekiṃa-121
 sedhati-48, 53
 sed hate-48, 53
 senā-118
 srru-115
 sev-63, 66
 sevati-49, 52
 sevate-49, 52, 146
 sevā-117
 seve-146
 so-43
 sotva-112
 soma-118
 sauti-52
 saudhātaki-119
 skandati-48

skandate-48
 skabb-42, 64
 skambha-17
 sknndati-54
 sknndate-54
 skhal-43
 skhalati-49
 skbalate-49
 skhid-61
 staghati-54
 stagbate-54
 stan-43
 stanati-48, 54
 stanate-48
 stanayitnu-114
 stanase-54
 stabdbnm-79
 stabb-64
 stabhnoti-79
 stambha-17
 stigh-42, 62
 stu-43, 65, 159
 stute-53
 stnnvanti-52
 stabb-42
 stuse-52
 stnseyya-109
 stūpa-121
 str-43, 65, 79
 strṇāti-53
 strṇite-53
 strṇute-53
 strṇoti-53
 stal-42
 stoka-105
 stauti-53
 styā-65

styai-43
 straiṇa-110, 121
 sthavira-115
 sthā-43
 sthānn-114
 stbāpayati-77
 stbira-115
 stbūna-118
 sthūra-115,
 sthūla-112, 115
 sthūlabba-110
 snā-43
 snih-160
 sniḃyati-54
 sniḃyate-54
 snu-43
 snute-48
 snauti-48
 spand-43
 spandati-49, 54
 spandate-49, 54
 spandanā-104
 spardh-43
 spardhati-54
 spardhate-54, 77
 spars-160
 spaś-42
 spūrdh-42
 spr-42, 159
 sprṇute-52
 sprṇoti-52
 sprt-77
 sprś-65
 sprśati-48, 53
 sprśate-48, 53
 sprb-43
 sprhayātu-122, 126

sphaḥika-120
 sphn-43, 72
 spbuḍ-72
 spbur-42, 65
 spburati-48, 53
 spburate-48, 53
 spbrj-43
 smayati-49, 54
 smayate-49, 54
 smayāka-113
 amarati-53
 smarate-53
 smi-43
 smilati-71
 sm-43, 159
 smera-115
 syati-53, 64
 syate-53
 syandati-49, 54
 syandate-49, 54
 sramś-43
 sramśati-49, 54
 sramśate-49, 54
 sravati-48, 54
 sravate-48, 54
 sru-43, 65, 72
 srunāru-87, 88
 srūv-42
 strotas-105, 117
 sllsyate-48
 svajati-49, 52
 svajate-49, 52
 svañc-42
 svañj-43
 svad-43
 svadati-53
 svadate-53

- svadbāyis-110
 svanati-54
 -svap-43
 svapati-54
 svapate-54
 svara-43
 svasa-86
 svid-42, 160
 -svidyati-54
 svidyate-54
 -svr-42
 hate-53
 hatya-118
 hatyā-118
 hatro-45
 hadati-54
 hadate-54
 han-43, 59, 86, 88, 98
 hanati-83
 -hanāmi-59
 hanomi-59
 hanta-147
 hanti-53, 59, 79, 83
 hantu-116
 haññanto-92
 hamm-79
 haya-64
 -har-65
 -nominal forms
 of 130
 harati-53
 harate-52
 haryati-52
 haryate-52
 harṣula-122
 havati-83
 has-43
 hasati-48, 54
 hasate-48, 54
 hastekr-80
 hā-43, 88
 hāni-116
 hāyati-83
 hālāpita-90, 91
 hās-62
 hi-43
 hims-43, 78
 himsati-54-84
 himsate-54
 hikk-159
 hikkati-54
 hikkate-54
 hiṅkaroti-80
 hiṇāti-84
 hiṇoti-84
 hiṇḍolā-122
 hinasti-84
 hinoti-52, 64
 hinv-43, 159
 hinvati-64
 hīnve-52
 himāni-122
 himelu-122
 hiraṇyaya-120
 hiraṇyava-121
 hīl-42
 hu-class of, 39, 40
 65, 87, 88, 159
 huta-83
 hurch-42
 hr-43
 hrdayitou-114
 hr̥dikṛtya-80
 hr̥ṣyati-48, 54
 hr̥ṣyate-48, 54
 hetu-116
 hevāka-113
 heṣ-159
 heṣati-54
 heṣate-54
 hesyati-48
 hesyate-48
 haimantika-120
 ho-86, 98
 hotrā-117
 honte-49, 54
 honti-49, 54
 bras-43, 65
 brasati-53
 brasate-53
 brasva-115
 brād-43, 159
 brādōni-116
 hru-42, 61
 hresati-54
 hresate-54
 blād-159
 bl̥fka-120
 hvayati-53
 hvayate-53
 hvar-42
 hvarate-52
 hvaranta-52
 hval-43
 hvalati-48, 54
 hvalate-48, 54
 hve-43







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